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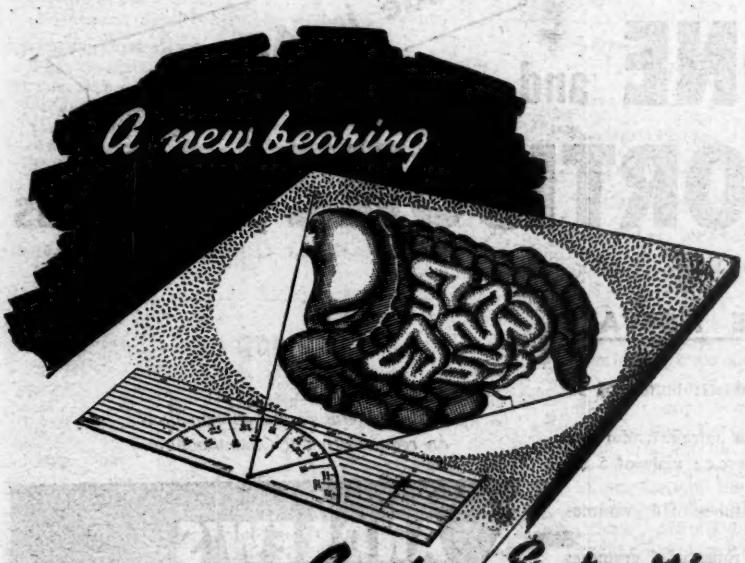
VOL. II.—41ST YEAR SYDNEY, SATURDAY, OCTOBER 9, 1954 No. 15



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An Address.[1]

By STUART PATTERSON,

President, Queensland Branch of the British Medical Association.

MAY I also, as did our retiring President, bid you a very cordial welcome to this, the second session of the sixtieth annual meeting of our Association? May I add that we feel particular pleasure in having at our annual meeting tonight His Excellency the Governor and Lady Lavarack? Our profession has always been stoutly loyal to the Throne. We remember that loyalty was exemplified by one of our greatest medical men, Sir William Harvey, who remained with Charles I when he was besieged at Oxford. The Throne has always responded to this loyalty of the profession, and Her Majesty (as was also her father before her) is the Royal Patron of our Association.

It is now one hundred and twenty-two years since there came into being in Britain the Provincial Medical and Surgical Association. This was later to become the British Medical Association, of which the British Medical Association of Queensland is a branch. We remember our founder, Sir Charles Hastings, whose wish it was that members of our profession should form an association for the diffusion of medical knowledge in an atmosphere of good fellowship. Tonight we do honour to his memory.

It is customary and fitting that the newly elected President of our Association should preface his address by saying how deeply he appreciates the honour conferred upon him by his fellow members. Two reasons make me particularly appreciate it: the first is that I conceive it is an honour that is being paid not only to me as an individual, but also to the great body of general practitioners throughout the State; the second is that it is just twenty-five years since my father was inducted into this chair into which I have been inducted tonight. Few father-and-son associations can have been happier than ours has been, and I am both pleased and proud that he and my mother are able to be here tonight.

The Family Doctor.

Most of us, I think, hold in our memory the picture of the family doctor we knew as children: a bluff, cheery soul with a sense of fun, who knew the whole family and was regarded by it as a privileged friend.

We are told that this old type of family doctor is on the way out, and that the old relationship between doctor and family no longer exists. I do not believe that this is so, but I do believe that there has been a deterioration in the doctor-patient relationship. For this, the public and we who are general practitioners are both in part to blame.

[1] Delivered at the annual meeting of the Queensland Branch of the British Medical Association on August 21, 1954.

Patients nowadays often bypass their family doctor and go direct to a specialist for the treatment of maladies that could and should be treated by the general practitioner.

The specialist, good fellow, no matter how sympathetic he may be, often knows little of the patient's background. His treatment, therefore, skilful as it is, is more impersonal. Thereupon the patient complains that the old relationship between doctor and family no longer exists. How, indeed, can it? If the public really values that old relationship, then it must get back into the habit of going initially to the family doctor when ill. If a second opinion is necessary or desired, it should be the family practitioner who refers the patient to the appropriate specialist, and after consultation with the specialist the patient is, wherever possible, sent back to the family doctor for further treatment.

We who are general practitioners must, however, take our share of the blame for the deterioration in the relationship. As family doctors, we must retain an interest in our patients as individuals, not just as cases. Most probably our patients chose us because of a belief in our trustworthiness rather than our special skill, knowing that we would, if necessary, send them on to others more skilled or more learned.

There is also an obligation upon us as general practitioners to accept responsibility for the emergency call at night. Every person has a right to be able to obtain such medical service.

Heaven knows our sleep is often enough disturbed by the shrill clamour of the telephone and the plaintive voice asking us to come at once—after perhaps days of illness and the doing of little or nothing about it. There is, however, an obligation upon us to say to our patients, "If you really need us, we are always prepared to help you, be it day or night". That is our simple duty as doctors, even if we are occasionally caught out by the neurotic or the hysteric.

I want to add here that if there is an obligation upon the general practitioner to accept responsibility for the emergency night call, there is an equal obligation upon the specialist who accepts patients from the street (that is to say, patients who have come to him direct, without being referred by a general practitioner). When such patients, having no family doctor, elect to go always to a particular specialist when ill, presumably regarding him as their family doctor, then that specialist should be prepared to accept emergency night calls to those patients, or alternatively should make arrangements for a general practitioner in the vicinity to attend them in such an emergency. If he accepts such patients without an arrangement of this sort, he does a disservice not only to the community but also to the profession.

How different, however, is the night call of these times from that of half a century ago. The knocking on the surgery door by a frightened messenger, bearing an incoherent message and concluding with the request to "Come quick"; the hurried dressing; the saddling or harnessing of horse or horses (or waking a sleeping groom and getting him to do it); and the setting out on a call that would in all probability mean giving up any idea of further sleep that night.

And now! A telephone which we can answer from our bed and which often enables us to assess the patient's condition so accurately that we can give such advice as makes a night visit unnecessary. And even should we have to make a visit, we have only to get into a vehicle with all the comforts of a modern armchair, proceed along what is probably a first-class bitumen road, see and treat the patient, and perhaps be back into our still-warm bed within the hour.

As for our armamentarium of drugs. What an inheritance, with our antitoxins, our sulphonamides and our antibiotics! Let us indeed give thanks and feel humble and full of admiration for those who have gone before.

But apart from these advantages, the life of a general practitioner today has much to offer those who choose it as a career. There is the diversity of each day's work, the stimulating challenge of the difficult or unexpected situation, the interest of the continuous observation of patients and their families, and not least, the confidence that patients and their families place in him. The good family doctor sustains his patients through the years, knowing as he does their background, their fears and anxieties, their weaknesses and foibles, their hopes and interests, even their financial affairs. And when a family doctor is attending an old patient in his last illness, I think that the patient draws great comfort from the fact that he is being looked after by someone who knows him like that.

What, we may ask, are the essential attributes of a general practitioner? He requires, in the first place, a knowledge in breadth rather than in depth, extending over the whole range of medicine. But he requires more than that. He requires kindness and understanding and an interest in his fellow human beings. Unless he is possessed of these qualities, he were better to avoid the life of a general practitioner.

General Practice and Specialism.

Today is the day of specialism. The day of the liberal university education appears, temporarily at least, to have gone. Nowadays, students specialize in a few subjects. In medicine, of course, this specializing is delayed until after graduation. Then the newly fledged doctor embarks on his chosen specialty.

It is inevitable and right that, with the enormous advances in medicine, there should be those specially skilled in its many branches. Yet never, I believe, was it more important for us to have good general practitioners.

I wonder if some of you remember the story told by Alfred Cox, for many years General Secretary of the British Medical Association, when he returned to England from a visit to Canada some years ago. A Scottish clergyman's wife, newly gone from Scotland to Canada, was shortly to have her first baby. So she went to her family doctor and asked him if he would look after her. To her astonishment, he informed her he did not do midwifery and recommended her to an obstetrician, who in due course confined her. Some time later the infant became ill, and again she called in her family doctor. This time he recommended her to a children's specialist, who duly arrived and pronounced the infant to be suffering from no less a disease than measles.

This, of course, may not represent the true extent to which general practice has been superseded by specialism in Canada, but it indicates the absurd lengths to which general practice may be supplanted. The ideal must surely be for the family doctor to have continuity of supervision of his patients from birth, through infancy and childhood, and then to become the trusted adviser when they have grown to adulthood and have children of their own. The wise family doctor will know his limitations, and when he requires expert help he will obtain it, just as he would if it was one of his own family who was ill.

Professor Derrick Dunlop of Edinburgh, who visited Australia in 1951 as the Sims Travelling Professor, stated that the general practitioners of this country were, in his opinion, the best in the world.

In many cases, of course, their very isolation compels self-reliance and versatility, but their training and general competence have been commented on by others besides Professor Dunlop. All of us, I think, believe that these standards must be maintained.

Training the Doctor in Medicine.

It has been said, and I believe rightly, that the training given to the medical student should be such as to turn out neither specialist nor general practitioner, but should give him a basic medical education upon which, after graduation, can be grafted the special training, be it for a specialty or for general practice.

It is now becoming increasingly realized that, while the student is at school, science subjects should not be taught

to the exclusion of the humanities—history, philosophy, literature and the arts—and that at the university the medical student should gain some appreciation of medical history and philosophy to give him the background he needs. In this way only will be developed what Osler has called "the flower of the profession"—the cultivated doctor.

Training the General Practitioner.

We have said that the aim of the medical schools should be to turn out not general practitioners but graduates with a sound basic knowledge of medicine. If this is so, where are the general practitioners to receive their special training which is to fit them for their work? For it is becoming increasingly realized that, on graduation, a doctor is not equipped to go out into general practice without some extra training.

Many of us believe that this should be one of the primary reasons for the establishment of a College of General Practitioners—not to raise the status of the general practitioner (which some believe to be the motive for setting up such a college) but to have as its principal aim the training of doctors for general practice.

Regional faculties of the British College of General Practitioners have now been founded in New South Wales and Queensland, and, given good support and guidance by wise counsellors, I think we may look forward to a new spirit in general practice.

Such a college will be run by general practitioners for general practitioners. It can assist medical schools in giving sound advice as to the sort of training students require for general practice; it can take a major share in the direction of post-graduate education of the general practitioner; it will encourage the general practitioner to carry out research; and lastly it will always be available to give help and advice to the general practitioner who requires it.

I hope that this new college will receive help and friendly cooperation from the older colleges of the physicians, the surgeons, and the obstetricians and gynæcologists, and that it will maintain happy relations with our own British Medical Association.

Hospitals and the General Practitioner.

One thing more needs to be said of the training of the general practitioner. If he is to serve the community properly he must have access to hospital beds. A doctor without a hospital is as absurd a creature as a carpenter without saw or hammer.

Let our governments remember this, for if there is one thing more than another calculated to kill a doctor's initiative and interest in his work, it is to deny him the right to follow-up patients into hospital. With the increasing emphasis on specialization in hospitals, general practitioners in the cities are being forced out of public hospitals. Some patients, of course, require and must have the specialized service that only a specialist can give. However, 80% of hospital patients could be looked after just as well by their own family doctor. The remedy would seem to be the provision of many more intermediate beds in public hospitals, where patients could be treated by their own family doctors.

In former days there were private hospitals for those patients who elected to be treated by their family doctors. Such private hospitals, however, are slowly but surely being forced out of existence by rising costs and the competition of State-controlled hospitals, and soon there will be few, if any, left. I believe, therefore, that it is the duty of governments to make intermediate beds available in public hospitals for those who desire to be treated by private practitioners and who make provision for this through payment of insurance premiums against admission to hospital.

Nationalization and the Welfare State.

Thank God—and I say this with fervour, not blasphemy—it is at last being realized that this post-war passion for nationalization, for the Welfare State and for social security is slowly but surely demoralizing our people.

Field-Marshal Lord Wavell gave a stirring address on the subject at the University of Edinburgh in 1949. The citizen of today, he told his audience, is born under a maternity benefit, educated at public expense, insured against ill-health and unemployment, pensioned against old age, and finally, when required, accorded a State-paid coffin, funeral and grave.

Are we certain that all this security is not undermining the independence of character and spirit of adventure which have been the basis of our safety and of our prosperity?

Do we remember the fable of Æsop about the wolf and the dog? How the dog was explaining to the wolf the advantages of such security—with kennel, regular meals and so forth. And the wolf's ironic retort: "And what is that collar which you have around your neck?" You cannot have security without a sacrifice of freedom.

Since the war it has been my privilege, as chairman of a branch of the New Settlers' League, to meet and help many migrants who have come to Australia to live. The great majority of these new settlers and their children are settling down well and will, I believe, make a very great contribution to the development of this country in the years that lie ahead. I will go further, and say that I believe that the large-scale immigration policy pursued by successive Commonwealth Governments since the war represents one of the greatest projects Australia has ever undertaken. At the same time, I have been appalled to observe the only too-frequent acceptance—particularly, I am sorry to say, amongst British migrants—of the idea that it is the duty of the State to spoon-feed and look after them. It reflects, I think, a pathetic softening of the fibre of our British character, due in large measure to the emphasis being placed on the Welfare State in Great Britain and, to a lesser extent, in this country too.

I wonder if some of you read that fascinating commentary in the *Illustrated London News* entitled "Our Notebook", formerly written by the late G. K. Chesterton and now by Dr. Arthur Bryant. Here is something the latter wrote seven or eight years ago:

> There is a world of difference between the active and the passive citizen. A nation of passive citizens is a nation in which public opinion is impotent, and power and pressure groups all powerful. Germany, in the years between the wars, was such a nation, and the Nazis rose to power and retained it by virtue of that fatal passivity.
>
> In the United Kingdom, more and more we are coming to rely on permanent officials and professional politicians to do our civic work for us. We are tending to become a nation of passive instead of a nation of active citizens.

The Doctor as a Leader in the Community.

This brings me to a statement of what I believe is a duty of the doctor in the community in which he lives—a duty which is quite distinct from that of healing or of preventing disease. It is his duty as a leader in the community. Our discipline and training in medicine give us peculiar advantages in fitting us for such leadership, and we should accept our responsibility in undertaking it.

Many of us give what time we can to community services such as Rotary, Legacy, St. John, Red Cross, Toc H and the like. A few accept responsibility in local government or in parliament. But there are two fields insufficiently cultivated by us. The first is that of youth guidance, which is sadly lacking in leadership and for which our profession has a responsibility. The hoodlum teenagers whose exploits we read about almost daily are a sad commentary on our neglect both as parents and as a community.

The other field in which I believe we have a responsibility is that of cultural leadership. I recollect Mr. Donagh McDonagh once saying that the medical profession in Australia had gained enormous social importance and, that being so, the profession should accept a share in its cultural leadership. That does not mean that a doctor requires

to study philosophy or spend his time in theatres or in art galleries. Such is his standing in the community, however, that if he is known to value such things he can do immense good, and conversely should he depreciate them he can hold back development, particularly in small communities where his lead tends to be followed.

The *British Journal of Sociology* recently reported the result of an opinion poll conducted among citizens of two British and two American towns. In each case the doctor headed the list as the town's most respected citizen. There is a moral here, but I shall leave it unsaid.

The British Medical Association.

Our profession, more perhaps than any other, must be self-governing. For we have come to realize that only the profession itself knows how best to preserve trust in itself.

Recently, it has been objected by persons outside the profession that disciplinary committees set up to control alleged abuses of the Pensioner Medical Service have consisted almost, if not entirely, of members of the British Medical Association. This criticism arises from the fact that the British Medical Association, its work and its aims, are very little understood by those outside the profession.

This emphasizes, I think, the need for the British Medical Association, either itself or through its journal, to maintain and develop a strong public relations department. Today the public is hungry for all the latest news on such topics as cancer, tuberculosis, gland treatment, the effects of smoking, and so on. The cost of medical care is also, in many countries, a charge on public funds, so that citizens have a very real interest in medicine.

It is impossible for us to ignore this public interest, and to remain indifferent and aloof. Each week and each month the medical journals are closely scanned in the newspaper offices for anything of news value. It depends upon us and our willingness to interpret such medical information whether the public is accurately informed. The Association in Britain is, in fact, alive to this and has appointed as public relations officer an ex-newspaper journalist who is building up a general information service which is proving of value to public and profession alike. Not only can such a department supply Press and broadcasting services with accurate and reliable medical information, but it can give publicity to important decisions of the Association and build up a favourable public opinion.

In this regard I want to pay a tribute to my predecessor, the retiring President, Dr. W. J. Saxton. The work he has done—first as General Secretary of the Australasian Medical Congress (British Medical Association) in 1950 and later as Honorary Secretary of the Queensland Branch—has been of enormous value to the Association. Perhaps the most valuable contribution he has made during his term of office, however, has been the fostering of friendly relations with bodies and persons outside the profession.

The British Medical Association has had, over the years, a proud record of service and a very clear conception of its responsibilities. During two world wars the Association has been entrusted with the extraordinary responsibility of mobilizing the profession for both military and civil purposes. Its advice is constantly being sought by governments and by public and private institutions. It publishes the *British Medical Journal*, one of the leading medical journals of the world, and sends it weekly to every one of its nearly 70,000 members. It also publishes a number of periodicals relating to the special branches of medicine. We in Australia publish our own journal, THE MEDICAL JOURNAL OF AUSTRALIA, which is sent to every member of the Association in this country.

Meetings of the British Medical Association provide opportunities for clinical papers and discussions. The Association also takes a leading part in world medicine through the World Medical Association. It protects members of the profession from exploitation and injustice, and it equally protects members of the public from exploitation by the profession.

Only those who have sat on the councils of the British Medical Association know the range of the work covered by those councils. The Association, moreover, is jealous of its ethics, and a few members of the profession have been consistently refused the privilege of membership of the Association on that count.

That the Commonwealth Health Scheme is, despite some imperfections, working as well and as smoothly as it is, is largely due to the Association through its Federal Council.

Never has the Association wavered in its belief that the profession should be self-governing. During two wars the profession proved itself brilliantly successful in managing the medical services and there is no reason to believe it has lost this capacity in peace. The frustration complained of by members of the profession in Britain today is, we hope, a temporary phase only, but it should serve to warn us in this country of the dangers of bureaucratic control of the profession by lay administrators—of which we ourselves have already had some experience.

I would like to say here that I believe that the attitude of the British Medical Association towards New Australian doctors should be more clearly understood. Common humanity demands that we help those who come to us in search of freedom and opportunity from those lands which no longer have these to offer. This applies to medicine no less than to any other vocation.

Unfortunately, we have had unhappy experiences with a number of those to whom we have given opportunities to practise; and it is of the utmost importance that medical standards in this country should not be lowered either by interference with the curriculum or by the registration of practitioners with standards—professional or ethical—inferior to our own. Those migrant doctors who measure up to our standards, I believe, we must and will accept.

Here, too, the British Medical Association has its part to play, for though it does not register medical practitioners, its influence can be, and is, a very real one. It is, in fact, our greatest safeguard.

We in Queensland are soon to have a headquarters worthy of that name—a thing whose lack we have felt keenly for many years. In it will be library, lecture and assembly hall, council chamber and office space, not only for our own Association but also for the British Medical Agency, with whom we have had harmonious and happy relations extending over many years.

This form of annual meeting which we are holding tonight, and which has become a feature of our medical year in Queensland, was instituted during the presidency of Dr. K. B. Fraser three years ago. It is, as far as I can discover, unique among the annual meetings of our Association held in other States and in other countries. I believe, and I think you will agree, that the form it takes, its colour, its touch of pageantry and the presence amongst us of so many distinguished citizens of this State, provide a fitting inauguration of our Association year, of the Bancroft Oration and of the post-graduate week which follows.

Before very long, we may hope to be meeting in our own British Medical Association Hall. Meantime, we are deeply grateful to the Chancellor and to the Senate of the University for having provided so appropriate a setting for this event.

Advice to the Recent Graduate.

Before I conclude, may I be so presumptuous as to offer some random thoughts to the recent graduate?

Few of us, I think, fully realize just how fortunate we are as a profession in our vocation, and what opportunities for service it offers. Into our consulting rooms come those afflicted in body and in spirit. It depends upon us whether or not they receive the sympathetic understanding they seek.

It is easy in this streamlined age to forget that medicine was an art before it became a science, and in diagnosis to rely too much upon our colleagues—the radiologist, the

pathologist and the biochemist—instead of upon our own careful history and clinical examination.

Our leisure, too, is something we should use well. So often after graduation we lose our interest in books and mental activities outside our profession, and an insidious process of cerebral atrophy sets in.

So often, too, do we lose our youthful spirit of adventure in our preoccupation for comfort and security. Not long ago our newspapers stated that no young doctors had offered for the position of medical officer to the Heard Island expedition. Other advertisements, calling for doctors for country hospitals, go unanswered every day. Has modern life, with its emphasis upon sewerage and hot water systems, the amenities of city life and the glamour of higher degrees and diplomas, caused us to lose our spirit of adventure?

On the credit side I believe that there are improvements on the olden days. Many of the petty jealousies that formerly divided some of the members of our profession are being replaced by friendliness and better intra-professional fellowship. The war has undoubtedly contributed to this, in that those who served in the forces and shared common hardships and discomforts became more tolerant of their professional brethren. Our British Medical Association has also done much to foster a good spirit among us. But it cannot be over-emphasized that the force of example by each and every one of us can do incalculable good, or harm, to the profession as a whole. There are many abroad today who take particular pleasure in discrediting us; we have been, and are still being, threatened with nationalization and the loss of our freedom; and we are being told repeatedly that we have lost the high regard of the public that we have traditionally held. All this constitutes a challenge to us to raise and to maintain our ethical standards, which should be, as Cæsar's wife, above suspicion.

Our Traditions.

In our time it has become unfashionable to speak of "Empire". Many of the modern generation, indeed, no longer regard loyalty and patriotism as virtues, and deride as Blimps those who still hold to them.

"But", says Arthur Bryant, that great Englishman, "it was not reason that manned the boats at Dunkirk, held the Sussex shores and the desert approaches to the Delta, patrolled the northern seas, stormed the D-Day beaches and pierced the Burma jungles. It was discipline, fortitude, endurance and hardihood. And Blimp was a far better and wiser man than the unstable and brittle intellectuals who derided him. The comfort and security we enjoy rests, as it has always done, on the bones of dead Blimps. Blimps who lacked the cleverness to see that patriotism and loyalty were humbug, but fortunately for us did not lack the fidelity and courage to die for us and their own outmoded faith."

I loved the story told by Commander Thomas Woodruffe in his book "A Seaman All Through". When the evacuation of Crete was at its height and our losses in ships were becoming intolerable, it was urged at an interservice conference that the time had come to abandon our efforts; that it was better to lose the soldiers than more ships. It was at this juncture that the senior naval officer present quietly remarked: "It takes only a few years to build a fleet, but it takes centuries to build a tradition. The evacuation will therefore continue." That naval officer was Admiral Andrew Cunningham.

The traditions of Britain and of our Empire have indeed taken centuries to build. Whether they are to be respected and preserved lies in our hands and those of our children. Many of us hope and believe that, with the accession to the throne of our Queen, Elizabeth II, we are on the threshold of a new era and of new glories.

May we as a profession, and with traditions much older even than those of our Empire—stretching back, in fact, more than two thousand years—may we play an honourable and worthy part in providing our share of the service and leadership of that renaissance.

CARCINOMA OF THE COLON.

By E. S. R. Hughes,
Melbourne.

The intestinal tract from caecum to anal canal is a more common site for malignant disease than is the breast or the stomach; indeed, the large bowel is second only to the skin as the most frequent site for primary malignant tumours (Figure I). Therefore, these growths present a particularly important problem, the surgeon's approach to which should be repeatedly subject to review.

Distribution of Carcinoma of the Large Bowel.

Malignant tumours of the large bowel are most commonly situated in the rectum, the sigmoid colon being a little less frequently involved. The remaining tumours are distributed fairly evenly over the more proximal part of the colon (Figure II). This arrangement is in accordance with similar published figures (Naunton Morgan, 1950; Hultborn, 1952; Daumerie, 1953). There is no satisfactory explanation although it has been suggested that as the fæces pass from the right to the left side of the colon and water is absorbed, an insoluble carcinogenic agent becomes more concentrated (Dukes, 1945).

The Present Series.

In my own series of 214 large bowel malignant tumours, 164 were situated in the rectum and 50 in the colon (Figure III). The sigmoid colon was the site in 23 cases. There were 34 female patients and 16 male patients. The oldest in the series was a man aged ninety years, and the youngest was a woman aged thirty-four years (Figure IV).

Pathology.

In one case the tumour was associated with ulcerative colitis, in another with multiple polyposis, and in a third there was an associated carcinoma of the rectum. In 47 instances histological examination showed the tumour to be an adenocarcinoma, in two a carcinoid, and in another a reticulosarcoma.

Local Spread.

In one case in which there was a carcinoma of the sigmoid colon, local invasion within the pelvis was so extensive that resection was impossible; in another case the left external iliac vessels were involved. In two instances a loop of small intestine was firmly attached to the tumour and required removal; in two, a large portion of the bladder was excised; and in two, where the carcinoma originated in the splenic flexure, the tail of the pancreas and spleen were removed. In one case the uterus was resected and in a further case portion of the anterior abdominal wall.

Lymphatic Spread.

Lymph nodes were found to be involved in 22 of the 46 patients subjected to resection, and in eight of these the affected nodes were at the site of the ligature.

Venous Spread.

Hepatic metastases were palpable in four cases at laparotomy. In a fifth case the left lung had been removed for a tumour which proved to be an adenocarcinoma; two weeks later the patient developed an abscess in the left iliac fossa. This was drained, and subsequently an adenocarcinoma was removed from the sigmoid colon. It is possible that the lung tumour was a secondary deposit from the carcinoma of the sigmoid colon, although the patient was alive and well and without evidence of malignant disease twelve months later.

Peritoneal Spread.

Peritoneal metastases were present in three cases; in two their extent deterred the surgeon from proceeding with the operation, but in the third a palliative resection of the colon was performed.

DIAGNOSIS OF CARCINOMA OF THE COLON.

There is a time lag between the onset of symptoms and operation which is unavoidable; in this series the average interval was four months whether the tumour was in the right or the left half of the colon. It is due mostly to the patient's hope that symptoms will correct themselves spontaneously. Once medical advice is sought, diagnosis usually follows quickly.

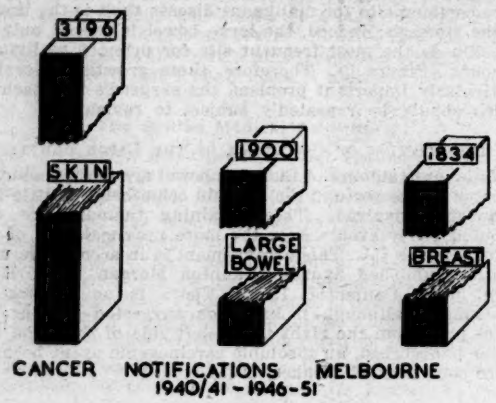

FIGURE I.
The incidence of carcinoma of the skin, large bowel and breast.

The two important symptoms are abdominal pain and the passage of blood. Alteration in bowel habit is often noticed by the patient, but does not usually occasion alarm in itself. If the symptoms cast suspicion on the large bowel, a complete investigation must be accepted by the patient. On occasions the clinician fails to recognize the significance of symptoms and prescribes medicine to relieve diarrhœa or constipation; but such errors are uncommon and it is impressive to note the promptness with which such patients are referred for investigation.

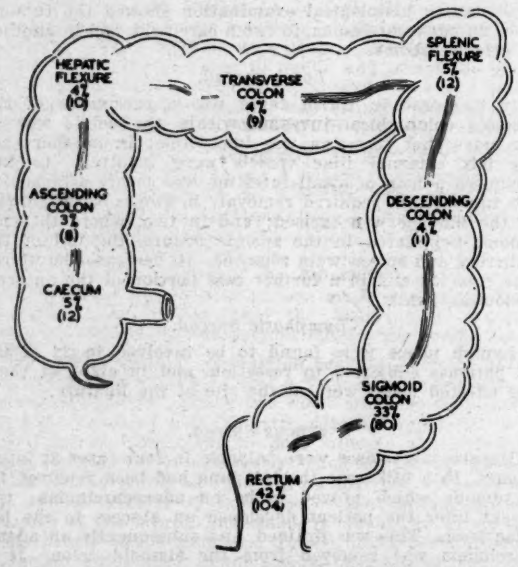

FIGURE II.
The distribution of carcinoma of the colon and rectum (Royal Melbourne Hospital).

Tumours of the large bowel are sometimes palpable through the abdominal wall; but the common sigmoid carcinoma is often below the brim of the pelvis and can be felt only through the anterior wall of the rectum, if at all.

Rectal examination is best carried out with the patient in a left lateral position. Practically all rectal carcinomata are palpable with the finger, which should always be carefully inspected for traces of blood after it has been withdrawn.

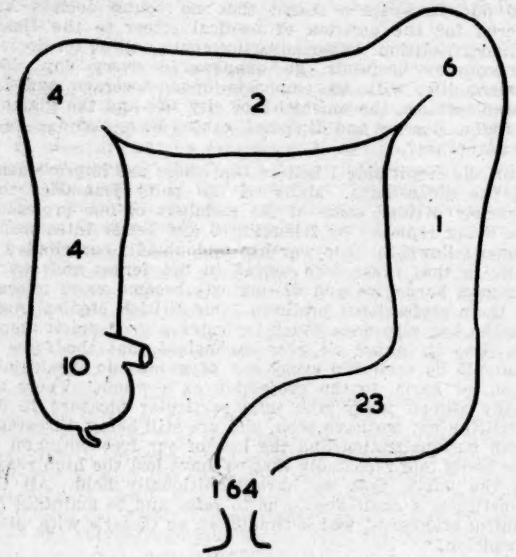

FIGURE III.
The present series (214 cases).

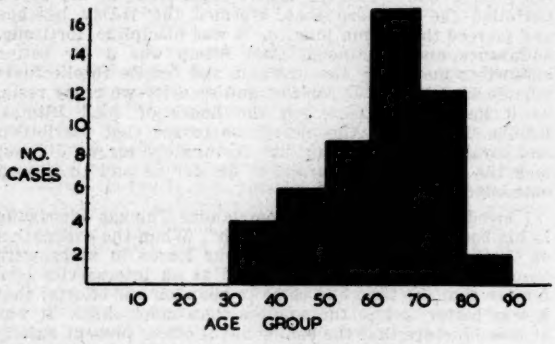

FIGURE IV.
Age distribution of 50 carcinomata of the colon.

Proctoscopic examination reveals the presence of hæmorrhoids, allows examination of the lower third of the rectum and permits removal of any liquid fæces, so facilitating subsequent sigmoidoscopic examination. This is performed without preliminary bowel washouts, because an important clue to the diagnosis may be the discovery of traces of blood and mucus on the surfaces of the motions. Sigmoidoscopic examination may reveal a tumour, sometimes quite large, that would be overlooked by the radiologist; it is unfair to criticize the latter when he fails to discover tumours in portions of the large bowel which are superimposed on one another in an X-ray film.

A barium enema X-ray examination should be entrusted to the expert alone. Small tumours at a stage of their existence when amenable to resection are easily overlooked, particularly if they are in the caecum, at the splenic flexure or in the sigmoid colon. A negative X-ray finding is reassuring only if so reported by the radiological specialist; but even then, if the symptoms or other signs particularly arouse suspicion, a laparotomy may still be indicated.

The large bowel can be traced accurately during the course of laparotomy, but small tumours may easily escape notice. The splenic flexure is difficult to feel unless the surgeon is careful to identify the spleen. The whole of the large bowel must always be palpated, even when there is a known tumour, because of the occasional presence of multiple tumours.

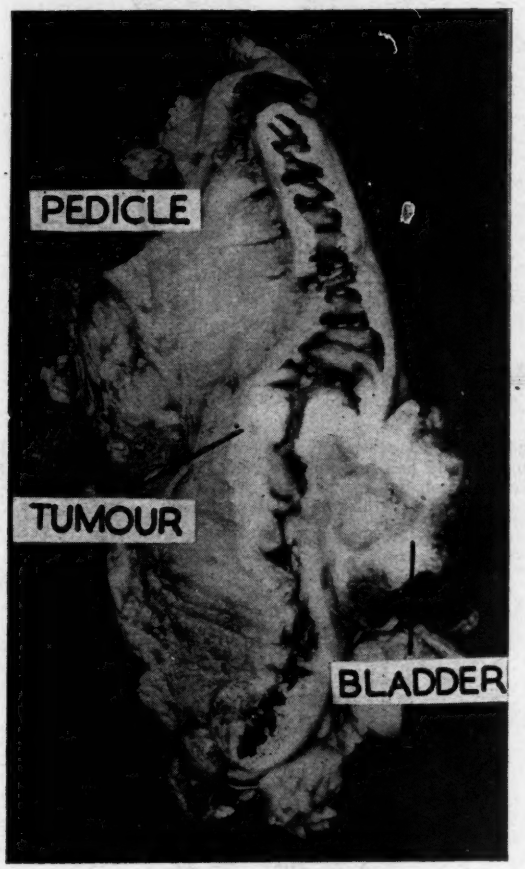

FIGURE V.

Carcinoma of the sigmoid colon "invading" the bladder. Histological examination did not disclose any tumour cells in the bladder wall (male patient, aged sixty-two years).

RESECTION OF CARCINOMA OF THE COLON.

Selection of Patients for Operation.

Although some surgeons feel capable of deciding without preliminary laparotomy whether or not a carcinoma of the rectum is operable, nearly all agree that exploration should not be denied to the patient with a carcinoma of the colon no matter how unpromising the prospects of resection may be. The presence of a hard and apparently irregular liver is no contraindication to operation, and even mild ascites need not deter the surgeon. Several patients with cachexia, ascites and palpable hard masses within the abdomen have not been subjected to exploration, and the site of the primary malignant growth is obscure. Admittedly some such patients examined by me may have had primarily colonic tumours, but they have not been included in this series.

With improved anæsthesia, efficient intravenous therapy and meticulous surgery, operative disasters are rare. Few patients are of such poor general physical health that resection is refused because of the fear that they may not survive the operation.

Laparotomy But No Resection (Four Cases).

After the abdomen had been explored it was decided not to proceed with the resection in four cases of this series. In two this decision was determined by the presence of widespread peritoneal metastases, and in two the tumour had spread extensively within the pelvis, and excision, although attempted, proved impossible. Involvement of a neighbouring viscus should not lead the surgeon to abandon the case, because multiple resections have often been followed by apparent cures (Van Prohaska, Govostis and Wasick, 1953).

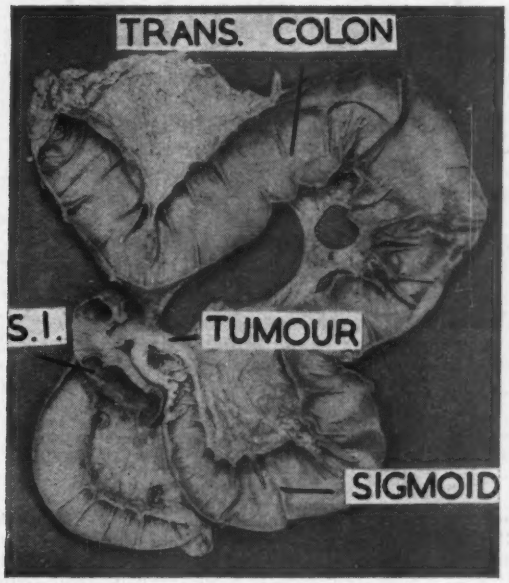

FIGURE VI.

Carcinoma of the sigmoid colon involving the transverse colon and small intestine (S.I.) (male patient, aged forty-nine years).

In one instance in this series (a male patient, aged sixty-two years) the sigmoid carcinoma was associated with a vesico-colic fistula; the vesical orifice of the fistula was situated just above the trigone. Removal of this tumour entailed isolation of the ureters to the bladder, and excision of the posterior part of the bladder and trigonal walls together with both vesicles. An end-to-end anastomosis was performed and a suprapubic cystostomy constructed. Convalescence was uneventful and the patient left hospital on the seventeenth post-operative day with the wounds healed and the suprapubic urinary fistula closed. Histological examination of the specimen revealed no evidence of malignant invasion of the bladder wall (Figure V).

In a further case the patient was a male, aged forty-nine years, and laparotomy disclosed a carcinoma of the sigmoid colon involving a portion of a redundant transverse colon and a loop of small intestine. A left hemicolectomy was performed with removal of the inferior mesenteric and middle colic vascular pedicles and followed by anastomosis of the hepatic end of the transverse colon to the rectum (Figure VI). Convalescence was uneventful, and he left hospital on the eighth post-operative day. Pathological study showed an inferior mesenteric gland to be involved and the middle colic group to be clear.

Palliative Resection (Five Cases).

In three of the cases in which hepatic metastases were present, a cure was impossible; but palliative resections were deemed desirable and were followed by several months of comfort. In a further case local peritoneal spread rendered the prognosis hopeless, but resection relieved the pain and bowel symptoms. In a fifth case a possible metastatic deposit had been removed from the left lung. Palliative resections should be sufficiently radical to prevent a local recurrence within the life span of the patient.

FIGURE VII.
Division of the marginal artery is associated with viability of the colon for approximately one or two centimetres beyond the point of ligature of the vessel. This is valuable in anastomosis, allowing accurate approximation of the bowel ends.

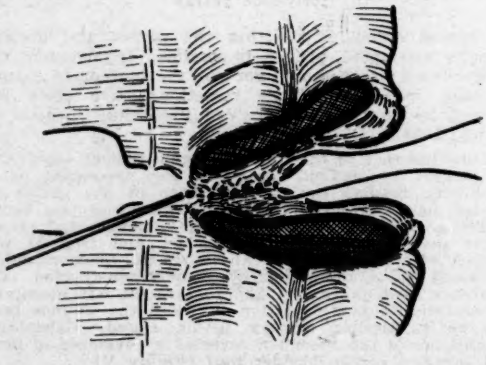

FIGURE VIIIA.
The two-layered technique of anastomosis employed in the present series.

Curative Resection (41 Cases).

In operations on patients with tumours that appear to be curable, the surgeon's objective is removal of the tumour and regional lymphatic spread. The latter is so closely related to the vascular pedicles of the bowel that their excision is mandatory; the amount of bowel removed depends on the length that shows evidence of lost vascularity after the pedicles have been tied. A resection to cure was performed on 41 of the patients in this series.

Anastomosis of Large Bowel After Resection

Once the bowel has been resected, whether with a palliative or a curative objective, continuity of the lumen must be restored. A permanent colostomy should never be the end result of treatment of a carcinoma of the colon. The anastomosis has perhaps worried the surgeon as much as the resection has the patient. Three main ways have been, and still are, employed by the surgeon.

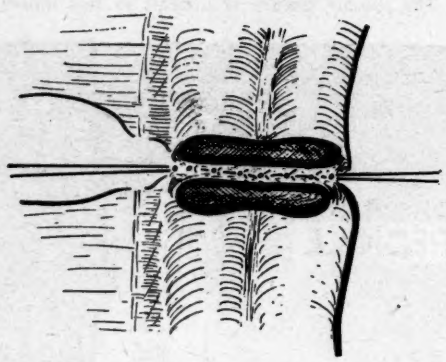

FIGURE VIIIB.
Posterior outer layer of interrupted fine silk sutures.

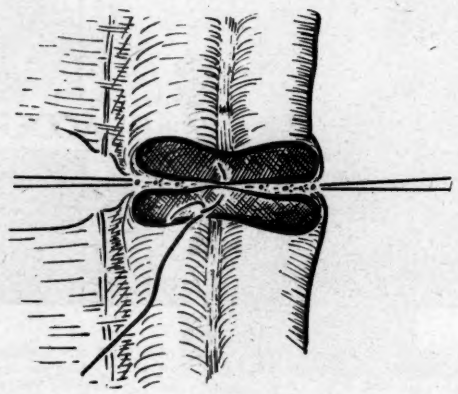

FIGURE VIIIC.
Inner layer of continuous fine chromicized catgut sutures. This is started in the centre posteriorly, and is a simple over-and-over suture.

Paul-Mikulicz Procedure (Extraperitoneal Colectomy).

The portion of the colon containing the tumour is freed, delivered outside the abdomen and there resected, and the two ends of the colon in juxtaposition form a spur which is crushed later. The remaining fæcal fistula is closed by a relatively simple operation. This procedure has fallen into disfavour, although it is still advocated by some surgeons. The method limits the extent of the resection, usually entails the use of an enterotome to crush the spur (a practice frowned upon by many) and is necessarily followed by a second operation, and the whole procedure involves a prolonged stay in hospital.

Multiple Stage Procedure (Preliminary Defunctioning Colostomy).

As a preliminary to resection of a carcinoma of the left side of the colon, a transverse colostomy is constructed. The distal part of the colon is washed out for ten to fourteen days, and in this so-called defunctioned bowel the operation of resection and anastomosis is performed. Subsequently the colostomy is closed. The method is sound in theory and widely practised. The chief objections are, firstly the limitation it may impose on adequate resections of the colon, and secondly (and of lesser importance), the need for three visits to the operating theatre. The necessity for preliminary defunctioning colostomies would remain only if the one-stage resections and anastomosis were associated with a higher mortality and morbidity, and this is certainly not the case. No surgeon will contest the need for preliminary colostomy or caecostomy in the presence of acute large bowel obstruction; but it is wrong to advocate the establishment of a colostomy as a preliminary to all resections and anastomosis.

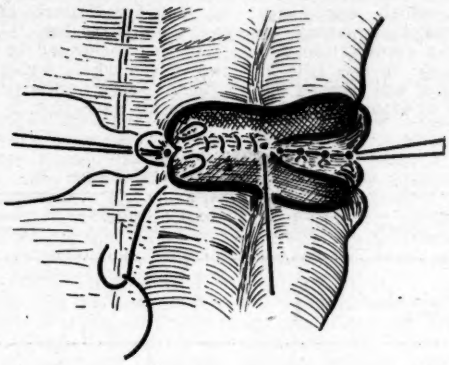

FIGURE VIIId.
After the corner has been passed, the suture is locked, and the second is started and carried towards the other corner.

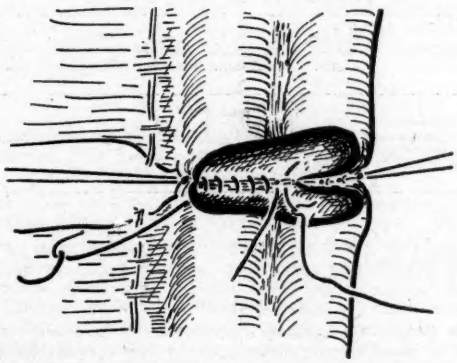

FIGURE VIIIe.
After the corner has been passed, the suture is locked, and the second is started and carried towards the other corner.

One-Stage Resection and Anastomosis.

Most surgical clinics favour resection followed by immediate open anastomosis. The surgeon who can confidently practise this operation must be an accomplished technician; indeed, there is no place for the inexpert or the occasional operator in colonic surgery. There are three essential prerequisites to a successful anastomosis.

The blood supply of the anastomosed ends of bowel must be adequate. This can be ensured by dividing the bowel after securing the pedicles. A marginal artery can always be identified. It should be carefully isolated and divided.

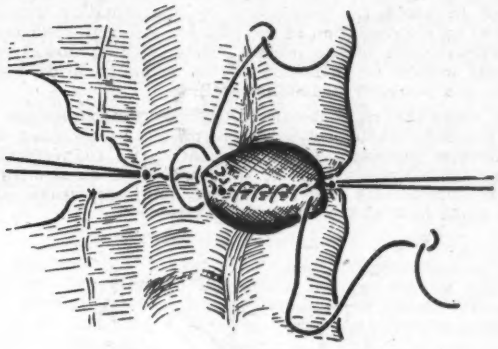

FIGURE VIIIf.
The two sutures are continued anteriorly as an inverting Connell stitch.

The bowel remains viable for one or two centimetres beyond the point of ligature of the marginal artery and this is valuable when the anastomosis is executed (Figure VII).

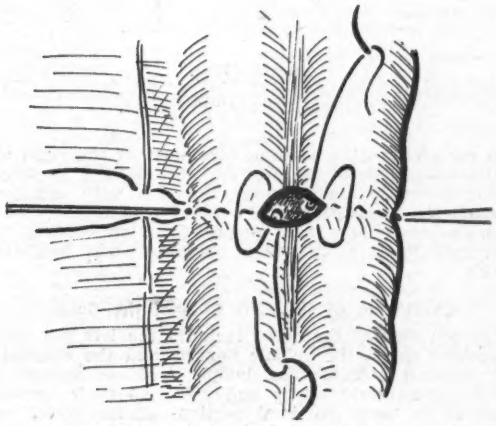

FIGURE VIIIg.
The inner layer is completed by tying the two sutures together.

There must not be the slightest tension on the sutures responsible for the anastomosis. Tension leads to avascularity and avascularity to necrosis and leakage. The surgeon should not hesitate to mobilize the bowel freely both proximally and distally to avoid the danger arising from tension.

Technique must be meticulous. The tissues should be handled gently, and all but the finest instruments discarded. The sutures should be spaced regularly and accurately inserted, large bites and tight knots being avoided (Figure VIII). A clean resection and a reliable anastomosis need no drain tube.

Carcinoma of the Right Side of the Colon.

The right side of the colon refers to the caecum, the ascending colon, the hepatic flexure and the related transverse colon. The lymphatic drainage of this end of the colon follows the ileo-colic artery and the right colic branch. To secure the lymphatic field, these vessels are removed at their origin from the superior mesenteric vessels, and this entails subsequent resection of the right half of the colon.

It is desirable to ligate the pedicle vessels at an early stage to avoid the possibility of disseminating tumour emboli by manipulation of the primary lesion in the course of mobilization of the colon. The duodenum and ureter should always be identified as the colon is lifted away from the posterior abdominal wall.

A one-stage right hemicolectomy is the procedure of choice, even when obstruction is present. Only once was it deemed necessary in the present series to perform a two-stage operation; at the first procedure an ileo-transverse anastomosis was constructed, and two weeks later the right half of the colon was excised.

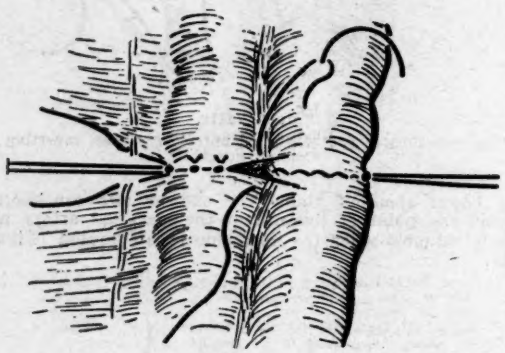

FIGURE VIIIH.
The anastomosis is completed with an outer anterior layer of interrupted fine silk sutures.

In my series of 18 cases of carcinoma of the right side of the colon, none of the growths were deemed inoperable or non-resectable; a one-stage resection with end-to-end anastomosis was performed in 17 instances without complications other than wound infection, and in the eighteenth case a two-stage operation was performed (Table I).

Carcinoma of the Left Side of the Colon.

The left side of the colon includes the left end of the transverse colon, the splenic flexure, and the descending and sigmoid colons. The lymph drainage follows the inferior mesenteric artery and vein and their branches, although in more proximal portions of the bowel some lymph is certainly directed along the middle colic vessels. Logical resection of tumours of this portion of the colon will entail removal of the inferior mesenteric artery in part or in whole, and in some instances at least it will be necessary to resect a major portion of the left half of the colon (Hughes and Kernutt, 1954).

If the surgeon is performing resection for cure rather than for palliation, the pedicle should be secured at the earliest stage possible. If the surgeon feels that a trial dissection should be conducted before the pedicle is ligated, the latter can be occluded temporarily by means of a rubber-guarded artery clip. The inferior mesenteric artery can be secured at its origin from the aorta without undue difficulty, even in the obese. The segment of the colon containing the tumour should be wrapped in a pack to avoid the possible dissemination of the tumour cells. The bowel should not be divided until the demarcation between viable and non-viable bowel is clearly established.

Of my series of 32 cases of carcinoma of the left side of the colon, in four cases resection was not performed; a one-stage resection with end-to-end anastomosis was possible in 18 instances without complication other than wound infection. Five patients presented with acute large bowel obstruction for which a caecostomy was performed, and seven to fourteen days later a formal resection and anastomosis operation was performed without complications. Two further patients presented with large bowel obstruction, and a transverse colostomy was constructed; resection was performed in both cases with one operative death, which was caused by complete failure of the anastomosis, apparently due to too much tension. A Paul-Mikulicz extraperitoneal resection was performed in three instances; in two (the first two of the whole series) the operation was carried out in the presence of obstruction, a plan of action no longer practised or advocated.

TABLE I.
Carcinoma of the Right Side of the Colon.

Site of Growth.	Number of Cases.	Inoperable Condition.	Two-Stage Operation.	One-Stage Operation.
Caecum	10	0	0	10
Ascending colon ..	4	0	1	3
Hepatic flexure ..	4	0	0	4
Total	18	0	1	17

The third patient on whom a Paul-Mikulicz type of resection was performed was a frail old man, aged ninety years, who was admitted to hospital with retention of urine and large bowel obstruction. A suprapubic cystostomy was established under local anæsthesia, and it was decided to relieve the obstruction with a left inguinal colostomy. It so happened that the tumour was at the apex of the loop of colon withdrawn, and hence it was accordingly resected (Table II).

TABLE II.
Carcinoma of the Left Side of the Colon.

Site of Growth.	Number of Cases.	Inoperable Condition.	Paul-Mikulicz Procedure.	Multiple-Stage Operation.	One-Stage Operation.
Transverse colon	2	0	0	1[1]	1
Splenic flexure	6	0	2	2	2
Descending colon	1	0	0	0	1
Sigmoid colon	23	4	1	4	14
Total ..	32	4	3	7	18

[1] Patient died.

DISCUSSION.

The individual surgeon's approach to carcinoma of the colon is considerably influenced by his conception of the safest technique in anastomosis. The widest possible excision of malignant growths of the colon is best obtained when no restrictions have been imposed in the form of a preliminary transverse or inguinal colostomy.

In cases not complicated by acute obstruction, the experience afforded by this series supports one-stage resection-anastomosis operations, whether the tumour is in the right or the left half of the colon. When there is an acute large bowel obstruction caused by a tumour, a caecostomy has proved quite an effective method of relieving the obstruction (Hughes, 1954), and in five cases in this series a resection followed the caecostomy in the second post-operative week with an uneventful convalescence in each case.

In 1945, Waugh and Custer, of the Mayo Clinic, gave an account of 50 consecutive cases in which immediate anastomosis had been performed after resection of lesions

of the left half of the colon, and concluded that a proximal colostomy was unnecessary in such cases. A. W. Allen, of the Massachusetts General Hospital, Boston, in a Hunterian Lecture delivered in 1950, stated that "one-stage definitive operations can safely be carried out in the majority of cases. Preliminary decompression procedures are now being reserved for the acutely ill and completely obstructed patients". Colcock (1951), of the Lahey Clinic, showed that in 1940 all 19 patients with cancer of the colon were operated on at the clinic according to the Mikulicz principles, but in 1949, 71 out of 72 patients with cancer of the colon were submitted to a one-stage resection with primary anastomosis, with a mortality rate of 2·8%.

From their experience in the treatment of carcinoma of the colon at St. Mark's Hospital in London, Lloyd-Davies, Naunton Morgan and Goligher have stated themselves in favour of a one-stage resection and immediate anastomosis, and they quote 109 cases with only three post-operative deaths, none of which were due to sepsis (Lloyd-Davies, Naunton Morgan and Goligher, 1953). S. O. Aylett (1953), of the Gordon Hospital in London, another institution dealing largely with this type of problem, found it unnecessary to establish a preliminary colostomy or caecostomy in radical resections of the colon.

Turrell and his associates, in the latest of their periodic extensive reviews of world literature embracing colonic surgery (Turrell, Krakauer and Maynard, 1953), state that "the preponderance of opinion favours primary resection with the immediate open end-to-end type of anastomosis for non-obstructive, non-perforated tumours of the colon".

Sufficient evidence has accumulated to show that resection and immediate anastomosis without colostomy can be accomplished without the patient being exposed to unnecessary dangers. The procedure permits the most radical excision of the lesion. Allen (1950) has shown that it is associated with twenty-four hospital days on the average, as compared with fifty-four hospital days when a preliminary colostomy is established. The comfort to the patient and the avoidance of multiple operations are additional advantages. The Paul-Mikulicz extraperitoneal colectomy and the defunctioning colostomy followed by resection have had important roles in the development of colonic surgery; but with modern surgical conditions these procedures should be replaced by the one-stage resection with immediate anastomosis.

Summary.

1. The study of the distribution of large bowel carcinomata shows that most occur in the rectum and sigmoid colon.

2. There were 50 carcinomata of the colon in the series which forms the subject of this review.

3. The tumours are, on the whole, amenable to resection with good prospects of cure. Peritoneal and venous metastases were present in at least eight of the cases. Local spread in two other cases was so extensive as to render even palliative excision impossible. In eight other cases subsequent microscopic examination of involved lymph nodes indicated a very poor prognosis. In the remaining 32 cases a wide resection of the tumour and regional lymphatics gave a reasonable chance of cure.

4. The interval between the onset of symptoms and operation was four months on the average. The diagnosis is made without difficulty in most cases in which investigation has been methodical.

5. No patient was refused operation in the belief that resection would prove impossible or would be too much for the patient. In four cases laparotomy was performed but no resection followed, because of peritoneal metastases and local fixation. In five cases it seemed from the evidence available after exploration that permanent cure was not possible, but a palliative resection was performed to relieve symptoms. In 41 of the cases of this series a radical resection of the tumour and its lymphatic field was carried out.

6. Most of the morbidity and mortality following operation for carcinoma of the colon appear to have been due to the various attempts to join the proximal and distal portions of the colon together after the resection. The Paul-Mikulicz operation was performed in three cases in this series, but is not advocated. A preliminary defunctioning colostomy is likewise not favoured. In 35 instances a one-stage resection and anastomosis was performed without loss, and without serious complication. In five instances in which there was an acute large bowel obstruction, a preliminary caecostomy relieved the obstruction, and resection and anastomosis were performed subsequently. In two instances a colostomy was first constructed to relieve the obstruction; subsequent resection was followed by loss of one of these patients.

7. With attention to detail the surgeon should be able at least to approach the excellent results obtained with the one-stage resection and anastomosis method by surgeon's at Saint Mark's Hospital, the Gordon Hospital, the Massachusetts General Hospital, the Lahey Clinic, the Mayo Clinic and other centres.

Acknowledgements.

I am indebted to the staff of the Royal Melbourne Hospital for permission to study the records to obtain the information embodied in Figure II. I should like to thank the Victorian Cancer Registrar for the information set out in Figure I.

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SOME EFFECTS OF RADIATION ON THE LYMPHOID CELLS.

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In the medical supervision of persons exposed to radiation due to X rays and/or radioactive substances, the accepted criteria have certain disadvantages, among which are the large coefficients of variation of a particular criterion (red cell count, white cell count, differential white cell count) within the class of non-exposed persons, and within the class of exposed persons, and the overlapping of the values between the classes. Also, not enough is known at present in regard to what is the best

criterion or what are the best criteria to rely on as indicators of very early damage to the organism.

The author has been interested for some years in the effect of various toxic agents (notably lead) on the ratio *of monocytes plus large lymphocytes to small lymphocytes*, and in 1948 carried out some preliminary experiments on this ratio in ten persons exposed to X rays (X-ray technicians and nurses).

Scope of Present Investigation.

Recently a more extensive investigation has been carried out which has confirmed the earlier results. In this *latter investigation 93 persons were examined. Some of* the persons concerned had no known exposure to harmful radiations (X rays, radiations from radioactive substances) or radioactive dusts or gases, being employed in clerical work, in ordinary chemical laboratories and in various other capacities as members of the staff of government departments. Others were employed as X-ray technicians or nursing sisters in the mass X-ray survey, scientists and technicians at the Commonwealth X-ray and Radium Laboratory, technicians or nursing sisters in the tuberculosis clinic at the State Department of Health, and technicians, nursing sisters and physicists at the Peter MacCallum Clinic of the Cancer Institute Board.

An estimate of the degree of exposure within several weeks of the test of some of the individuals concerned has been made by the Commonwealth X-ray and Radium Laboratory by means of monitoring films. In no case did these latter show any evidence of a dose greater than the maximum permissible.

In order to avoid any tendency to be influenced in assessing the size of the lymphocytes by knowledge of the occupation of the person from whom the blood film was obtained, the occupation was not revealed in the great majority of instances until the films had been examined.

In ten cases in which examinations were carried out several years ago for the ratio, the occupation was known to the author, who prepared the films and examined them. These were not examined for the percentage of granular lymphocytes, but only for the ratio.

In twelve cases the technician prepared the films, but the author knew that they were of persons who were engaged in work involving some risk of exposure.

In all the remaining cases (71 for determination of the ratio and 71 for the determination of the percentage of granular lymphocytes) the films were made by the same technical assistant and merely numbered. The key to the numbers was kept by the technician until the author had examined nearly all the films. In none of the 71 cases was the category ("exposed to radiation" or "not exposed to radiation") revealed until after the ratio and the percentage of granular lymphocytes had been determined. Thus it can be maintained that in the great majority of cases "wishful thinking" could have no bearing on the results.

The results have been submitted to statistical analysis to determine whether or not there was any significant differences between the values for the two groups. In addition, similar analysis has been made in regard to the smaller group, for which the occupation was entirely unknown to the author at the time of the tests.

Method.

The stain used was Leishman's.

The optical system used in examining the films was oil immersion ×60 objective, ×10 compensating oculars, prism setting for binoculars ×1·5, making total magnification ×900. The instrument was a Zeiss "Lumipan".

Lymphocytes were described as large if they were greater than 10μ in diameter. White cells were measured by means of a scale inserted in the ocular mounting, 5·75 small divisions of this being equal to 10μ in the film.

Films were examined across their length from edge to edge in regions near the beginning, called B, at the middle, called A, and across the tails, called C. About 30 monocytes *plus* lymphocytes were counted in B, about the same number in A, and about 80 in C. The reason for the larger number in C was that there was a greater concentration of all white cells per unit area of film in the tails than in A and B. Since there is also a differential distribution of the monocytes along the length of the film, it was obviously no use excluding the "tails". The ratio was determined by taking the aggregates of the monocytes *plus* large lymphocytes in A *plus* B *plus* C, and the aggregates of the number of small cells in the same regions, not by taking the mean of the separate ratios in the three areas.

The lymphocytes were divided into those with granules in the cytoplasm and those without, but no distinction was made according to the size of the granules. Not very much time was spent on deciding whether a cell was or was not in the granular class, and no higher magnification than that stated was used in order to help the decision. In other words, unless the granules could be detected by quite a short inspection that cell was classed as non-granular.

The classification into granular and non-granular lymphocytes was done only in the regions A and B, since in regard to cells in C, although a very good estimate of size could be made, it was not possible to get a reliable estimate as to the granules.

Results.

Effect on Ratio of Monocytes plus Large Lymphocytes to Small Lymphocytes.

The ratios for 41 persons (Group A) who were engaged in occupations which exposed them to a certain amount of radiation, and for 36 persons (Group B) who had no exposure to radiation at all are shown in Table I.

TABLE I.

Ratio.	Group A. Number.	Group A. Fraction of the Total in the Group.	Group B. Number.	Group B. Fraction of the Total in the Group.
0·0 to 1·0 ..	0	0·0	0	0·0
1·1 to 1·5 ..	0 } 13	0·0 } 0·317	6 } 29	0·167 } 0·806
1·6 to 2·0 ..	3	0·073	11	0·306
2·1 to 2·5 ..	10	0·244	12	0·333
2·6 to 3·0 ..	4	0·098	0	0·000
3·1 to 3·5 ..	6	0·146	3	0·083
3·6 to 4·0 ..	5	0·122	0	0·000
4·1 to 4·5 ..	1	0·024	1	0·028
4·6 to 5·0 ..	2	0·048	2	0·055
5·1 to 5·5 ..	3 } 28	0·073 } 0·683	0 } 7	0·000 } 0·194
5·6 to 6·0 ..	2	0·048	1	0·028
6·1 to 6·5 ..	1	0·024	0	0·000
6·6 to 7·0 ..	0	0·000	0	0·000
7·1 to 7·5 ..	1	0·024	0	0·000
7·6 to 8·0 ..	3	0·073	0	0·000
	41	—	36	—
Mean Ratio ..	3·8		2·4	

The persons who constituted Group A were engaged in the mass X-ray survey as technicians, nurses *et cetera*, in the tuberculosis clinic as technicians, and in the Peter MacCallum Clinic of the Cancer Institute Board as technicians and nurses engaged in X-ray therapy, X-ray technicians, and nurses and technicians engaged in radioactive treatment.

Table I shows the distribution of the ratio in the two groups A and B.

Of the 35 persons who had ratios over 2·5, 28—that is, a fraction equal to 0·80—of them were in the exposed group.

Of the 42 persons who had ratios under 2·5, 29—that is, a fraction equal to 0·69—of them were in the unexposed group.

The mean ratio for the 41 persons in Group A was 3·8, and for the 36 persons in Group B, 2·4.

The t value for comparison of the means was 4·22, which for $n = 75$ corresponds to a P value $< 0·001$; but the variances in the two groups differ significantly, and hence the t value may represent the differences in the variance in the two groups.

However, a t value determined from a comparison of means of the logarithm of the original values was 5·004, corresponding to a P value of $< 0·001$. There was then a highly significant difference between the mean values for the two groups.

Similarly, a comparison for a smaller group of 20 persons (Group A) consisting of persons whose occupation was entirely unknown to the author at the time of examination of the films, and the same group B, whose category was also entirely unknown, gave a t value for comparison of the means of the logarithms of 3·558, which for $n = 54$ corresponds to a P value $< 0·001$. This also indicates a highly significant difference between the means of these two groups, in which all the occupations were quite unknown at the time of the tests.

Effect on Percentage of Lymphocytes Showing Granules in Cytoplasm.

The effect on percentage of lymphocytes showing granules in cytoplasm is shown in Table II. Group A consists of the same type of person as for Group A for the ratio, but not so many of them, since the percentage of granular lymphocytes was not determined in a few of the earlier tests.

TABLE II.

Percentage of *Lymphocytes* Showing Granules.	Group A. Number.	Group A. Fraction of the Group in the Range.	Group B. Number.	Group B. Fraction of the Group in the Range.
0 to 5 ..	6		0	
6 to 10 ..	2		0	
11 to 15 ..	4 } 23	0·676	0 } 1	0·028
16 to 20 ..	7		0	
21 to 25 ..	4		1	
26 to 30 ..	2		5	
31 to 35 ..	4		6	
36 to 40 ..	2		5	
41 to 45 ..	2 } 11	0·324	3 } 35	0·972
46 to 50 ..	1		7	
51 to 55 ..	0		3	
56 and over	0		6	
Total	34	—	36	—
Mean value of percentages	20·62		42·36	

Of those with less than 25% granular lymphocytes, 23 out of 24—that is a fraction equal to 0·958—of them were in the exposed group.

Of those with more than 25% granular lymphocytes, 35 out of 46—that is, a fraction equal to 0·761—of them were in the unexposed group.

The mean percentage of lymphocytes showing granules in the cytoplasm for Group A was 20·62, and for Group B, 42·36.

A comparison of the means gave a t value of 7·541, which for $n = 68$ corresponds to a P value of $< 0·001$. There was thus a highly significant difference between the mean percentage showing granules in the two groups.

Correlation Coefficient between Ratio and the Percentage of Lymphocytes which Show Granules.

The correlation coefficient for 74 pairs of observations of the ratio and the percentage of granular lymphocytes in the same individual was $-0·4728$. For 74 pairs this corresponds to a P value of $< 0·001$. There is thus a highly significant inverse correlation between these two values.

As the ratio increases, owing to exposure to radiation, the percentage of the lymphocytes showing granules decreases.

Unpublished work shows that as the ratio increases owing to absorption of lead, the percentage of lymphocytes showing granules does not decrease.

Percentage of Large and of Small Lymphocytes Showing Granules in Different Areas of the Film for Exposed and Unexposed Persons.

From consideration of 2327 lymphoid cells in unexposed persons and 1962 in exposed persons the following facts were established.

For unexposed persons there is no significant difference between the percentages of large lymphocytes which show granules in Area A and in Area B of the films (57·25% and 48·13% respectively). For exposed persons there is no significant difference between the percentages of large lymphocytes which show granules in Area A and in Area B, but this percentage is about half that found for unexposed persons (26·86% and 26·47% respectively).

Similar statements apply for the percentage of small lymphocytes showing granules—29·3% in A and 28·3% in B for unexposed, and 14·84% in A and 14·05% in B for exposed persons.

For the total large lymphocytes and the total small lymphocytes in areas A *plus* B, the percentage of large lymphocytes showing granules is about twice that of the small for both unexposed and exposed persons, and the percentage of lymphocytes showing granules in exposed persons is half what it is for unexposed persons for both large and small.

Application of Results.

At the present stage of the author's investigations it is not yet possible to state exactly what the application of the results may be in clinical practice or in the control of or prevention of excessive exposure, but it is felt, nevertheless, that they are worth recording.

One or two points may be mentioned. In an over-all review of the classifications of the persons investigated, each person was placed in the class "exposed" or "unexposed", according to an arbitrary standard for the ratio (> 2·5 was considered "exposed") and for the percentage of granular lymphocytes (> 21·0 was considered "unexposed") and this placement was checked by comparison with the subject's known occupation. On this basis 63 out of 84 were correctly placed by the ratio—that is, 75%—and 70 by the percentage of granular lymphocytes—that is, 83%. Only three out of 84 were wrong by both methods—that is, 3·57%.

In the case of one subject who was showing signs of ill health—mostly fatigue, palpitation on exertion—for which her private medical adviser could find no cause other than exposure to radiation, the most useful indications of her condition during the period of disability and recovery were the percentage of lymphocytes showing granules and the percentage of lymphocytes showing pseudopodia and the percentage of the monocytes which were of a particular abnormal type.

Discussion.

It has not been possible up to the present stage to correlate the findings directly with the actual individual exposures. In no case in which it was possible to estimate exposure at periods close to the time of the tests by means of monitoring films was more than the accepted tolerance dose exceeded. The results, then, indicate that exposure to less than the accepted tolerance dose causes recognizable effects on both these criteria.

In none of the subjects tested, except the one referred to above, was there any complaint of symptoms of ill health. Thus the divergences from the normal values for unexposed persons which were found in this investigation in exposed persons were compatible with a satisfactory condition of health, so far as this could be judged by general clinical condition.

What is wanted is knowledge of the values or of changes in the values which indicate imminent significant damage to the organism. It may be that, as in the case of lead, when the ratio falls to the values found in unexposed persons then trouble is present too, or imminent.

A point of general hæmatological interest is that the increase in the ratio is associated with a decrease in the percentage of granular lymphocytes, although normally it is the larger lymphocytes which show the greater percentage having granules. It may be that there are two effects of radiation, one to stimulate the production of a greater number of large lymphocytes, and also a destruction of the granules in both large and small lymphocytes. On the other hand, it may be that the effect of radiation is to stimulate the production of relatively larger numbers of large lymphocytes without granules.

There appear to be other effects of exposure to radiation. The type of monocyte seems to change. There appears to be a larger proportion of atypical monocytes of a much larger than ordinary type with very large indented nucleus sometimes reaching from side to side of the cell. Such cells have been described by Browning (1951) as appearing in persons engaged in painting with radioactive materials.

There is some doubt whether there is also a change in the percentage of pseudopodal type of lymphocyte. There is a suggestion of it. In regard to neither of these two changes is the evidence definite, but it appears that further work on these aspects may be worth while. Dickie and Hempelmann (1947) found, *inter alia*, that exposure to radiation caused an increase in the number of abnormal lymphocytes described as those showing increase in the number of refractive neutral red bodies in the cytoplasm. These were shown only in supravitally stained films stained with Janus green and neutral red. They were not shown in fixed preparations. Ross *et alii* (1952) reported from animal experiments that during recovery from irradiation the percentage of large lymphocytes in the lymph greatly increased, and there were many abnormal large lymphoid cells. They stated that in normal lymph large lymphocytes were only 2% to 5% of all white cells, whereas in the case of irradiated animals they amounted to as much as 70%. They considered that large lymphocytes in the lymph could be taken as indicative of regenerative effects in lymphopoiesis. L. O. Jacobson, E. K. Marks and E. Lorenz (1949) reported the presence of abnormal large lymphoid cells and mitotic lymphoblasts in the blood as the result of exposure to ionizing radiation.

It is proposed to continue this investigation especially in relation to the effects in patients receiving radium treatment or treatment with radioactive isotopes.

Summary.

1. Exposure to radiation causes a significant change in the ratio of monocytes *plus* large lymphocytes to small lymphocytes, and in the percentage of lymphocytes which show granules in the cytoplasm when stained by Leishman's stain.

2. The application of these findings is discussed.

3. So far, no definite relationship between the magnitude of the changes observed and the degree of exposure has been found.

Acknowledgements.

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CAN ATROPHY OF THE HYPERTROPHIED PROSTATE GLAND BE INDUCED BY CUTTING ITS BLOOD SUPPLY? A SURGICAL SUGGESTION.

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Removal of the hypertrophied prostate gland, whether manually or by transurethral resection, has been one of the most successful operations of surgery. Nevertheless it remains a formidable procedure. The patients are elderly. Often there has been more or less kidney failure. The two common complications, hæmorrhage and sepsis, are unpredictable in spite of all advances, and often ruin what has apparently been a successful operation. Most surgeons would be relieved if some easier way of producing the same result could be developed, particularly if such a result could be achieved without the necessity for opening the bladder.

The purpose of this paper is to suggest that it may be possible to cause atrophy of the hypertrophied gland—or if not actual atrophy, retrogression—by cutting the gland's blood supply or part of its blood supply. The paper records the various attempts that have been made to produce this result and reports one partially successful case. It points out, however, that although the particular method used in this case was partially successful it was not considered to be a sound one. Moreover, it involved opening the bladder. Suggestions are therefore put forward for its improvement. The work is presented in this partially complete form for the reason that the writer has been obliged to give up the practice of surgery and will not be continuing this work—at all events not on its surgical side.

Many years ago, after an operation for inguinal hernia, the writer was mortified to find some months later that the testis on the same side had atrophied. This complication is well known. It has happened twice in the writer's practice after inguinal hernia operations and twice after operations for undescended testes. In the two last-mentioned cases the writer had not yet learned that it is rarely necessary to enter the spermatic cord, and on both occasions arterial bleeding was produced. The interval of time that elapsed before atrophy was noted in these two cases is important and will be referred to later.

It occurred to the writer that if atrophy of the prostate gland could be similarly produced it would be an excellent way of avoiding the difficulties associated with its removal. However, a study of its blood supply as described in text-books revealed that the gland was supplied by more than one artery, and moreover that there was a free anastomosis between the whole group of arteries supplying the pelvic organs and prostate gland. It seemed impossible, therefore, to hope for any success from an artery-cutting procedure. However, in 1939, Sir Henry Newland drew attention to R. H. Flocks's work on the arterial supply of the prostate gland (Newland, 1939). Flocks's description differed from that of the anatomical text-books (Flocks, 1937).

> The main source of arterial blood supply to the prostate gland comes from the inferior vesical artery. There is no single prostatic artery, but there are about four or five branches coursing more or less parallel to each other, which for convenience are grouped together descriptively and called the "prostatic artery".
>
> The "prostatic artery" gives rise to the groups of arteries which distribute themselves in a fairly regular manner throughout the prostate. These are best named the urethral group and the capsular group. The urethral or penetrating group immediately penetrates the tissue at the prostatic-vesical junction. Here it sends some

branches into the lateral lobe and then distributes itself along the bladder neck and urethral surface of the prostate to supply the vesical neck and the inner portion of the prostate. The other group, the so-called capsular or non-penetrating group, courses along the posterolateral surface of the gland and sends branches ventrally and dorsally to supply the outer portion of the prostate. In other words, there is an inner and outer blood distribution within the prostate corresponding respectively to the urethral portion where the periurethal glands are situated and to the external portion where the five true prostatic lobes are situated.

There is a moderate development of the urethral group of arteries from infancy to adulthood. Inasmuch as the vast majority of the benign enlargements of the prostate are central—next to the urethra—and probably affect the periurethral, Albarrann's and Home's glands, it is reasonable to suppose that the urethral arteries and their branches will undergo coincidental hyperplasia when benign enlargement of the prostate occurs. Exactly this distribution of vessels is observed in all of the injected and cleared specimens obtained from patients with prostate hypertrophy—namely that the hypertrophied portions are supplied in the main by the urethral group of arteries. The median lobe is supplied almost in its entirety by urethral arteries coming in on each side at the prostatic-vesical junction at the level of the clefts between the lateral and median lobes. Other urethral arteries entering in the same location and also more anteriorly in the region of the anterior cleft supply the lateral lobes. These vessels after leaving the prostatic-vesical junction course distally through the substance of the prostate and also just beneath the urethral surface to supply the surrounding tissue. Practically the entire hypertrophied portion of the lateral lobe is supplied by the urethral group of arteries and its branches. Only the very outer portion of it is supplied by the branches from the capsular group which have penetrated through the false capsule. There are some anastomoses between the branches of the two groups but these are rather small in the moderate sized prostate.

The course of the urethral arteries to the lateral lobe in bilateral hypertrophy and the amount of tissue supplied by them is beautifully demonstrated in those cases where before the arteries were injected a ligature was placed on the right side at the internal urethral orifice at 11 o'clock so as to include a piece of tissue 2mm. in diameter. After the injection and clearing a marked difference is to be noted between the two sides. The side with a ligature shows a tremendous interference with the blood supply to the lateral lobe. In fact if the suture had caught just a little more tissue so as to include one vessel placed more deeply the entire lateral lobe would have been practically avascular. On the other hand the side without the ligature shows a profuse blood supply entering at the prostatic-vesical junction and coursing distally through the substance of the lateral lobe—i.e. the urethral group of arteries.

After studying Flocks's work, Sir Henry Newland suggested that it might be possible "to pass a suture at an appropriate distance on each side of the middle lobe and thus control most of the arterial hæmorrhage which ordinarily occurs during and after enucleation". It struck the writer that if such an interruption of the blood supply was possible, it might be used to induce complete or partial atrophy of the gland. It should be pointed out here that the method of lessening a gland's activity by interrupting its blood supply is not new in surgery. It has been widely used in the surgery of the thyroid gland. It should be further pointed out that, provided no infection is present, the body has remarkable powers of absorbing large amounts of dead tissue. The word "absorbing" has been specially chosen to describe what happens, as the dead tissue often disappears without leaving any trace. For instance, every time a ligature is tied during an operation, dead tissue is left behind. Sometimes the amount of tissue included is quite large, as in the case of the pedicle of an ovarian cyst. The outstanding example, however, is provided by extensive soft-tissue injuries—such, for instance, as those which occur in comminuted fractures. If operation is carried out after such injuries—because, for example, the fracture is compound—quite large amounts of dead tissue have to be removed. However, if such a fracture is "simple", the body deals with this dead tissue without the slightest difficulty. This process of "absorption" is quite different from the "sloughing" that is seen on the surface of the body; for example, after burns. The writer decided that, if the opportunity offered, he would make the attempt. The idea formed was to select a case in which, because of partial kidney failure, it was desirable to drain the bladder for a period before removing the gland. The method of drainage used would be that of suprapubic cystostomy. The arterial interruption would take place during this preliminary operation. The effect of the interruption would then be noted at the second operation.

Soon after this a suitable case presented.

A male patient, aged fifty years, was referred by Dr. A. E. Grounds. He had suffered from prostatic symptoms for some time. Rectal examination revealed a large prostate gland. The tongue was dry and the breath unpleasant. The blood urea content was 60 milligrammes per 100 millilitres. Suprapubic cystostomy was performed. The prostate was large and projected well into the bladder. The following procedure was carried out. A finger was inserted at the 4 o'clock position at the prostatic-vesical junction (the 12 o'clock position being taken as the mid-line anteriorly). The finger was pushed in for about one and a quarter inches. It was then moved anteriorly and posteriorly so that the prostate was separated from its capsule over the area between the 3 o'clock and 5 o'clock positions. The finger was then inserted at the 8 o'clock position on the other side and the prostate and capsule were separated between the 7 o'clock and 9 o'clock positions. It was hoped by these manœuvres to divide the urethral arteries on each side. Bleeding was stopped by pressing down on the prostate (still in position, of course) from above for ten minutes. Thereafter there was no more bleeding. The patient did well and the kidney failure soon cleared up. After about ten days he started to pass urine well. No special significance is attached to this. Cystostomy greatly lessens congestion. However, so greatly relieved were the patient's symptoms that he would not hear of a second operation and left hospital. He did not return for follow-up examinations and was lost sight of for many years. The remainder of his history will therefore be given later.

This operation was performed on two other occasions. In the first of these the second operation was carried out three weeks after the first. No change could be discovered in the prostate gland during the second phase.

On the next occasion there was considerable oozing after the first operation, and at the end of a week the second stage had to be carried out. There was no change in the gland.

This operation has not been performed again. The writer decided that, although it might be sound anatomically, it was unsound surgically, inasmuch as devitalized tissue was exposed to the irritating and possibly infected urine.

After this no further operative attempts on these lines were made for a considerable period. During this period, however, the writer spent a good deal of time in studying, in the dissecting room, the anatomy of the pelvic arteries. It was found that such dissection was not easy, even after the arteries had been injected with a dye. It was found that a more useful method of study was to inject an opaque medium into the arteries and then to make an X-ray examination in the manner indicated by Flocks. As will be suggested shortly, angiography in the living subject will probably be found to be the most fruitful method of anatomical attack. The idea of this work was to find the exact position in which sutures should be placed outside the bladder in order that blood could not enter the prostatic arteries. It was thought that such a position should be close to the bladder so that there would be no auxiliary supply from anastomotic arteries.

When it was considered that this position for passing the sutures had been sufficiently worked out, the operation of cystostomy combined with the placing of the artery-tying sutures was carried out on three occasions. The second stage of each of these three operations was performed three weeks after the first. In no case was any change discovered in the gland. On none of the occasions when the artery-tying sutures were being placed did the writer feel absolutely certain of the anatomy. He considers that further study is necessary on this point and suggests that the method used should be angiography on the

operating table just before the operation is commenced. It would be an easy matter to inject the dye into the hypogastric artery. The usual serial photographs would then be taken. The position of the prostate gland could be indicated by placing a metal ring over that part that projects into the bladder. The ring would be marked in the same way as a clock.

Discouraged by these apparent failures, the writer gave up further attempts for the time being. However, in 1949 an interesting event occurred. The writer was informed by one of the resident medical officers of the Launceston General Hospital that there was in hospital a patient on whom the writer had previously operated. This turned out to be none other than the patient on whom the first operation described had been performed, and who had left hospital without waiting for the second stage. He was admitted to hospital with a cardiac illness. He stated that since the operation on his bladder he had had no further trouble with his urine. He died in hospital. After the post-mortem examination the pathologist, Dr. M. P. K. Shoobridge, stated that the prostate was not normal, but the enlargement was minimal, and that there was no projection into the bladder. The findings in this case must be regarded as being very suggestive. It is, of course, possible that the great diminution in the size of the prostate was due to the cystostomy. The writer believes, however, that some of it was due to the interruption of the blood supply.

The writer was stimulated by this experience to make further attempts at producing atrophy. Owing to the apparent failures with the sutures placed close to the bladder, it was decided to make quite certain of modifying the arterial supply by tying that part of the hypogastric artery which gives rise to the pelvic branches. It was realized that such an interruption could be ineffective for the reason that blood might reach the prostatic arteries by way of anastomising branches crossing the mid-line from the other side. There was just the chance, however, that the flow of the circulation would be such that the prostatic arteries would not be entered. Of course, the hypogastric artery cannot be tied unless there is a free anastomosis from the other side. The existence of such an anastomosis can easily be demonstrated (in the dissecting room) by injecting an opaque medium into one hypogastric artery and then radiologically examining the pelvis, when it will be seen that the medium has passed freely to the other side.

Such an operation was carried out retroperitoneally just before cystostomy operation was performed. It struck the writer, whilst he was doing this, that if the urine was infected it would be wise to suture the bladder to the wound and not open it for twenty-four hours, so that the exposed retroperitoneal space would be sealed off. The second operation was carried out three weeks later. On this occasion the writer felt certain that the half of the prostate on the side of the suture had shrunk appreciably. So certain was he that he considered that the manœuvre should be repeated. However, it has not yet been repeated.

On considering, in retrospect, these various attempts it has become obvious to the writer that he made one great and fundamental mistake, inasmuch as he did not allow a long enough interval to elapse between the first and second stages of the operations. In the rereading of the notes relating to the two cases of undescended testes, previously described, in which atrophy of the testis followed operation, it was found that the atrophy was not apparent at the first monthly review. It was only at the second monthly review that the atrophy became obvious, and even then it was not complete. It would seem that if results are to be expected an interval of several weeks will have to elapse between the first and second stages. The partial success of the first operation may not have been due to the superiority of the anatomical approach, but to the fact that the patient refused to wait for the second stage, thus giving the first one time to produce its result. As far as patients who are uræmic are concerned, there is no drawback in such a delay of several weeks. For instance, one surgeon of the writer's acquaintance, if obliged to perform a cystostomy operation in these circumstances, regularly allows a period of three months to elapse before the second stage.

Before this paper is concluded, it must be pointed out that the whole of the preceding discussion refers to the preparatory and investigatory stage. If it is found possible to produce atrophy of the prostate gland regularly by arterial interruption, the operation in the majority of cases will consist of nothing more than placing and tying the sutures. It will not be necessary to open the bladder.

Summary.

It is suggested that atrophy of the hypertrophied prostate gland may be induced by interrupting its blood supply. One partially successful result is reported. As the method used in this case was not thought to be a sound one, other methods of producing the same result are suggested.

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ABRIDGED LIFE TABLES AND THEIR CONSTRUCTION.

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Australian official life tables constructed over the past thirty years have been based on mortality rates calculated by dividing the mean deaths recorded in each age group during the three years centred on a census year by the population enumerated in the appropriate age group at the census. This has the advantage that the mortality rates so calculated, and hence the official life tables of which they form the basis, attain a high degree of accuracy.

Between census years no official tables are published. As a result, trends in the mortality experience of the population during the intercensal period are not clearly known. Workers in public health, demography and other similar fields using vital and health statistics are thus frequently faced with the alternatives either of making assumptions based on out-of-date life tables or of constructing for later years what are usually described as "abridged" life tables by means of approximate methods. This is a problem which is by no means restricted to Australia, although research workers in this country are much less favourably placed than those in, for example, the United States, where the National Office of Vital Statistics periodically publishes abridged tables.

The construction of life tables employing the highly mathematical principles adopted by actuaries has become, as Pearl (1923) has said, "an esoteric cult". The methods used have become so complicated as to be beyond the competence of the majority of students of public health and similar problems. In the construction of the abridged tables, however, the mathematics used are fairly elementary, and the results, while lacking the high accuracy of the official tables, are usually sufficiently accurate for all practical purposes.

There are four methods of constructing abridged life tables which have achieved a wide measure of popularity amongst public health and other statisticians. The first is that described by Kuczinski (1935) and modified by Glass (1940), the second that suggested by Greville (cited by Dublin and Lotka, 1949), the third that proposed by Reed and Merrell (1939), and the fourth that used by the United States National Office of Vital Statistics in constructing abridged life tables for the United States for 1949 (United States Department of Health, Education and Welfare, 1953). All these afford ready means of preparing abridged life tables, and the purpose of this paper is to examine their applicability to Australian conditions.

General Principles of Construction.

In an article in his very useful series on Australian mortality experience appearing in this journal, Lancaster (1951) described the general principles of life-table construction. It is not,

therefore, proposed to repeat the description here except in so far as this is necessary in setting out the principles followed in constructing abridged tables.

In the construction of abridged life tables, the customary notation is used. Thus:

x=exact age in years.

n=length of interval in years. (This symbol is omitted when $n=1$.)

In the recorded statistics:

${}_nD_x$=deaths in the age group x to $x+n$.

${}_nP_x$=population in the age group x to $x+n$.

${}_nm_x=\frac{{}_nD_x}{{}_nP_x}$=death rate in the age group x to $x+n$.

In the life-table population:

l_x=survivors to age x, out of the original cohort.

${}_nd_x=l_x-l_{x+n}$=deaths in the age group x to $x+n$.

${}_nL_x=\int_x^{x+n} l_x dx$=population in the age group x to $x+n$.

${}_nm_x=\frac{{}_nd_x}{{}_nL_x}$=death rate in the age group x to $x+n$.

${}_nq_x=\frac{{}_nd_x}{l_x}$=probability of dying between age x and $x+n$.

${}_np_x=1-{}_nq_x$=probability of surviving from age x to $x+n$.

$T_x=\int_x^{\infty} l_x dx$=total number of years of life remaining to survivors at age x.

$e_x^0=\frac{T_x}{l_x}$=mean expectation of life of survivors at age x.

The process of constructing a complete life table may be divided into three distinct phases. The first covers the preliminary adjustment of the basic population and vital data, so as to eliminate errors and mis-statements customarily associated with such material. The second involves the calculation, from the adjusted data, of rates of mortality at each age, thereby providing the basis for the life tables. (In some countries, for which the population data and the deaths of persons five years of age and over are reasonably complete, death rates are computed directly on the basis of the reported population and death statistics, and these rates are subsequently smoothed, or graduated, by appropriate mathematical formulæ.) The final phase requires the computation of the remaining life-table values.

Although the necessity for satisfactory basic information is recognized, it is not the practice, in the construction of abridged life tables, to attempt the detailed adjustment of the data, as is undertaken by the actuary. Rather, it is considered that, since the methods used are only approximate and absolute accuracy is not desired, adequate results may be obtained by using the recorded figures. The process of constructing an abridged life table thus starts with the second phase mentioned above—namely, the calculation of rates of mortality for the particular age or age group. The fundamental problem then reduces itself to determining the relationship between the death rate in an age group x to $x+n$, $({}_nm_x)$, and the probability of dying between ages x and $x+n$, $({}_nq_x)$.

The Relationship Between ${}_nm_x$ *and* ${}_nq_x$.

The suitability of proceeding directly from the ${}_nm_x$ value, deduced from the crude population and mortality data, depends to a very considerable extent upon the size and accuracy of the data. If the data are really small, or are known to be subject to notable errors, it may be doubted whether anything more than a calculation of the central death rate for each age group by actuarial methods can be justified. It would be difficult to accept the correctness of the calculated values of ${}_nm_x$, based on the crude data, as being sufficient to support a life table without a deal of research and investigation. A certain amount of graduation might be needed. On the other hand, if the data are large and accurate, so that the ${}_nm_x$ values are reliable, any reasonable method of connecting ${}_nm_x$ and ${}_nq_x$ should give satisfactory results.

As a matter of interest, it may be noted that actuaries have been rather dubious of deriving values of ${}_nq_x$ directly from ${}_nm_x$ and have preferred to adopt rather more detailed methods, even in preparing abridged life tables.

The construction of an abridged life table proceeds on the assumption that the ${}_nm_x$ value derived from the recorded statistics is equal to the ${}_nm_x$ value of the life table. In point of fact, this assumption may not be altogether justified, but the error involved is not likely to be very great, at least in the main body of the life table.

Now, by definition,

$$ {}_nm_x=\frac{{}_nd_x}{{}_nL_x}=\frac{l_x-l_{x+n}}{\int_x^{x+n} l_x dx} \quad \ldots\ldots\ldots (1) $$

and

$$ {}_nq_x=\frac{{}_nd_x}{l_x}=\frac{l_x-l_{x+n}}{l_x} \quad \ldots\ldots\ldots\ldots (2) $$

indicating that, provided the equation for l_x is known, ${}_nq_x$ is capable of being expressed in terms of ${}_nm_x$.

Perhaps the most obvious assumption is that l_x may be regarded as a linear function in the age-interval n, which assumption leads to the equation

$$ {}_nq_x=\frac{2n\cdot{}_nm_x}{2+n\cdot{}_nm_x} \quad \ldots\ldots\ldots\ldots (3) $$

Another assumption is that l_x may be represented by an exponential function, which leads to the relationship

$$ {}_nq_x=1-e^{-n\cdot{}_nm_x} \quad \ldots\ldots\ldots\ldots (4) $$

Reed and Merrell compared the results obtained by applying these two equations to the 1910 United States Life Tables and concluded that neither of these two theoretically derived equations could be considered an adequate description of the relationship. In both cases error occurred, particularly in the higher age groups, equation (3) leading to unduly high results, especially beyond age eighty years, and equation (4) rather understating the ${}_nq_x$ values from about age fifty onwards. On empirical grounds, therefore, they suggested that an equation of the form

$$ {}_nq_x=1-e^{-n\cdot{}_nm_x-an^2\cdot{}_nm_x^3} \quad \ldots\ldots\ldots (5) $$

in which a is an arbitrary constant, would be more satisfactory. For a they determined a value of 0·008.

Kuczinski, in his method of constructing an abridged life table, proceeds directly to the calculation of the ${}_np_x$ values by means of the equation

$$ {}_np_x=\frac{{}_nP_x-\frac{n}{2}\cdot{}_nD_x}{{}_nP_x+\frac{n}{2}\cdot{}_nD_x} \quad \ldots\ldots\ldots\ldots (6) $$

Converted into terms of the life-table notation, this is reduced to

$$ {}_np_x=\frac{2-n\cdot{}_nm_x}{2+n\cdot{}_nm_x} $$

from which

$$ {}_nq_x=\frac{2n\cdot{}_nm_x}{2+n\cdot{}_nm_x} $$

which is exactly the same equation as equation (3), above. In other words, Kuczinski proceeds on the assumption of a straight-line relationship between l_x and l_{x+n}, an assumption which was specifically rejected by Reed and Merrell as inapplicable to United States conditions.

Another method of abridged life-table construction is suggested by Greville. The formula which he advances for correcting ${}_nm_x$ and ${}_nq_x$ is a variant of equation (3), allowing for some departure from linearity in the relationship between l_x and l_{x+n}. His formula is:

$$ {}_nq_x=\frac{{}_nm_x}{\frac{1}{n}+{}_nm_x\left[\frac{1}{2}-\frac{n}{12}(k-{}_nm_x)\right]} \quad \ldots\ldots (7) $$

where $k=0\cdot09$.

The United States National Office of Vital Statistics, in constructing the 1949 abridged life tables for the United States, also adopts a method by which a fixed relationship is assumed between ${}_nm_x$ and ${}_nq_x$. A value ${}_nh_x$, defined as the ratio ${}_nq_x$ divided by ${}_nm_x$, is calculated for each age group, the ${}_nm_x$ values being based on the recorded population and mortality statistics for the years for which the latest official life table has been calculated, and the ${}_nq_x$ values being taken from the official table.

TABLE I.

Estimated $_nq_x$ Values and Their Deviations from Official Values: Australia, 1946–1948.

Age (Years)	Males.								Females.							
	Kuczinski.		Greville.		Reed and Merrell.		United States of America Abridged.		Kuczinski.		Greville.		Reed and Merrell.		United States of America Abridged.	
	Estimate.	Deviation.	Estimate.	Deviation.	Estimate.	Deviation.	Estimate.	Deviation.	Estimate.	Deviation.	Estimate.	Deviation.	Estimate.	Deviation.	Estimate.	Deviation.
0 to 1[1]	0·03185	−0·00014	0·03185	−0·00014	n.c.		n.c.		0·02516	−0·00003	0·02516	−0·00003	n.c.		n.c.	
1 to 2	n.c.[2]		0·00328	−0·00001	n.c.		n.c.		0·00299	0·00003	0·00299	0·00003	n.c.		n.c.	
2 to 5	0·00837	0·00048	n.c.		n.c.		n.c.		0·00887	0·00041	n.c.		n.c.		n.c.	
1 to 5	n.c.		0·00473	0·00010	n.c.		n.c.		n.c.		0·00356	0·00005	n.c.		n.c.	
0 to 5	0·03995	0·00032	0·03959	−0·00004	n.c.		0·03186	0·00037	0·03153	0·00037	0·03186	0·00004	n.c.		0·00323	0·00011
5 to 10	0·00458	0·00023	0·00459	−0·00024	0·00459	−0·00024	0·00444	0·00009	0·00321	0·00009	0·00321	0·00009	0·00321	−0·00009	0·00294	0·00003
10 to 15	0·00384	−0·00037	0·00384	−0·00037	0·00384	−0·00037	0·00389	−0·00042	0·00258	−0·00003	0·00258	−0·00003	0·00258	−0·00003	0·00294	0·00003
15 to 20	0·00702	−0·00015	0·00702	−0·00015	0·00702	−0·00015	0·00702	−0·00015	0·00346	−0·00011	0·00346	−0·00011	0·00346	−0·00011	0·00345	0·00012
20 to 25	0·00855	0·00001	0·00856	−0·00002	0·00855	−0·00001	0·00844	−0·00010	0·00539	−0·00003	0·00539	−0·00003	0·00539	−0·00003	0·00536	—
25 to 30	0·00845	0·00006	0·00845	−0·00006	0·00845	−0·00006	0·00850	−0·00011	0·00748	−0·00016	0·00748	−0·00016	0·00748	−0·00016	0·00746	0·00014
30 to 35	0·01004	0·00003	0·01004	−0·00003	0·01004	−0·00003	0·01006	−0·00005	0·00888	−0·00020	0·00888	−0·00020	0·00888	−0·00020	0·00890	0·00018
35 to 40	0·01318	—	0·01318	—	0·01318	—	0·01326	−0·00008	0·01186	−0·00009	0·01186	−0·00009	0·01186	−0·00009	0·01172	0·00023
40 to 45	0·02040	0·00012	0·02042	−0·00010	0·02043	−0·00009	0·02042	−0·00010	0·01633	−0·00001	0·01634	−0·00001	0·01634	−0·00001	0·01639	0·00006
45 to 50	0·03340	0·00047	0·03344	−0·00043	0·03343	−0·00042	0·03337	−0·00050	0·02398	−0·00046	0·02400	−0·00046	0·02400	−0·00046	0·02401	0·00045
50 to 55	0·05553	0·00050	0·05564	−0·00061	0·05564	−0·00061	0·05613	−0·00110	0·03748	−0·00077	0·03753	−0·00082	0·03753	−0·00082	0·03746	0·00075
55 to 60	0·08470	0·00106	0·08492	−0·00084	0·08494	−0·00082	0·08490	−0·00086	0·05204	−0·00028	0·05213	−0·00019	0·05214	−0·00018	0·05212	0·00020
60 to 65	0·12882	0·00083	0·12918	−0·00027	0·12928	−0·00017	0·12946	−0·00051	0·07937	−0·00010	0·07956	−0·00029	0·07958	−0·00031	0·07981	0·00054
65 to 70	0·19152	0·00015	0·19240	−0·00043	0·19263	−0·00066	0·19404	−0·00206	0·12359	−0·00229	0·12400	−0·00188	0·12403	−0·00185	0·12355	0·00233
70 to 75	0·27473	0·00274	0·27524	−0·00223	0·27569	−0·00178	0·27760	−0·00013	0·20162	−0·00259	0·20239	−0·00182	0·20247	−0·00174	0·20355	0·00066
75 to 80	0·38690	0·00267	0·38627	−0·00204	0·38643	−0·00220	0·40605	−0·00982	0·31773	−0·00204	0·31834	−0·00143	0·31849	−0·00128	0·32002	0·00025
80 to 85	0·54353	0·00568	0·53633	−0·00152	0·54241	−0·00456	0·52765	−0·01020	0·48059	−0·00185	0·47710	−0·00164	0·47722	−0·00152	0·43210	0·00336
85 to 90	0·73087	0·02925	0·70075	−0·00067	0·70385	−0·00243	n.c.		0·66401	−0·00071	0·64460	−0·00012	0·64426	−0·00046	n.c.	
90 to 95	0·92530	0·06702	0·84326	0·00398	0·84190	0·00262	n.c.		0·85873	−0·05975	0·79706	−0·00008	0·79570	−0·00119	n.c.	
95 to 100	1·11740	0·18073	0·86737	−0·00930	0·86613	−0·07064	n.c.		0·97589	0·06169	0·87258	−0·04162	0·87141	−0·04279	n.c.	

[1] Corresponding values, calculated by Glass's method are: males 0·03171 (−0·00028) and females 0·02496 (−0·00023).

[2] "n.c." denotes not calculated.

The assumption underlying the abbreviated method of life-table construction used is that, in each age interval x to $x+n$, the ratio $_nh_x$ may be regarded as having the same value in the life table under construction as in the standard table. The convenience of this method in the construction of, say, a series of annual life tables lies in the fact that the values of $_nh_x$ can be calculated once and for all, and can then be used each year, until revised "standard" tables become available, as adjustment factors to convert the age-specific death rates $_nm_x$ into values of $_nq_x$ on which an abridged life table can be based.

In each of the four methods outlined, it has been found necessary to make special provision to meet under-enumeration of children in the early years of life. Reed and Merrell use variations of their equation (5) for any age grouping involving the ages 0 or one year, but since their applicability to Australian conditions is open to very real doubt, they do not call for comment here.

TABLE II.

Period.	Males.	Females.
1920 to 1922 ..	0·10	0·07
1932 to 1934 ..	0·12	0·15
1946 to 1948 ..	0·10	0·11

For the first year of life both Kuczinski and Greville apply the same principle in the determination of the value q_0. The probability of surviving from birth to the attainment of the first birthday is viewed as the product of two probabilities—namely, that of surviving from birth to the end of the calendar year of birth and that of surviving from the beginning of a calendar year to the first birthday in that year. The notations used differ, but the formulæ used are precisely the same. In terms of the Kuczinski notation, the relationship is expressed:

$$q_0 = 1 - p' \times p'' = 1 - \frac{n' - m' - m''}{n' - m'} \times \frac{n'' - m''}{n''} \quad \ldots\ldots (8)$$

where p' indicates the probability of surviving to the end of the calendar year of birth; p'' the probability of living long enough in the next calendar year to survive the first year of life; n' the children born in the preceding calendar year; n'' the children born in the current calendar year; m' the children born and deceased in the preceding calendar year; m'' the children born in the preceding calendar year and deceased aged under one year in the current calendar year; m''' the children born and deceased in the current calendar year.

Greville obtains his q_1 value by a similar line of reasoning, and thence applies his standard formula, equation (7) above, to arrive at subsequent $_nq_x$ values. Kuczinski, however, proceeds directly to the calculation of the value $_4p_1$ by means of the equation

$$_4p_1 = \frac{_4P_1 - 1 \cdot 2_4D_1}{_4P_1 + 2 \cdot 8_4D_1}$$

which, in terms of $_nq_x$, becomes

$$_4q_1 = \frac{4 \cdot _4m_1}{1 + 2 \cdot 8_4m_1} \quad \ldots\ldots\ldots\ldots (9)$$

Glass has pointed out that, since many countries do not give the calendar year of birth of the children who die before reaching their first birthday, equation (8) has limited application in practice. He suggests that, if a life table is being constructed for a period, say, three years, or for a year in a period in which the numbers of births and deaths in the first year of life have not varied very greatly, accuracy is not significantly impaired by using either the births in the particular year or the average of the births in the three-year period, and relating the deaths in the first year of life to these births. The formula for q_0 would then read

$$q_0 = 1 - \left(\frac{\text{births} - \text{deaths}_{0-1}}{\text{births}}\right) \quad \ldots\ldots (10)$$

The value of q_0, as computed by the United States National Office of Vital Statistics for its abridged life table, is derived from the birth and death statistics, being taken as equal to the adjusted infant death rate. The adjustment is made by allocating the deaths of infants occurring during a given year to the year in which the infants were born. The infant deaths so allocated are then related to the births occurring in the respective

year of birth. The expression for computing the adjusted infant mortality rate may be written thus:

$$\text{Adjusted rate} = q_0 = \frac{D(1-f)}{E} + \frac{Df}{E'} \quad \ldots\ldots (11)$$

where D=number of infant deaths occurring in the given year; f=ratio of deaths occurring in the given year among infants born in the preceding year to the total infant deaths of the given year (this is referred to as the "separation factor"); E=number of births occurring in the given year; E'=number of births occurring in the preceding year.

Special procedures are also adopted by the National Office of Vital Statistics in respect of the age groups from eighty-five years onwards. It is pointed out that, since all those who reach age eighty-five years in the life table cohort must die some time after that age, it follows that ${}_\infty q_{85}=1$. Hence, the assumption

Table III.

L_x Values.	Males.		Females.	
	Official Table.	Abridged Table.	Official Table.	Abridged Table.
L_0	97,133	97,283	97,983	97,860
L_1	96,576	96,614	97,430	97,310

that the value of ${}_\infty h_{85}$ is the same in the table under construction as in the standard table is not admissible. As will be noted later, the value e^0_{85} is calculated by a direct process.

Calculation of Other Life Table Values.

The values of l_x and d_x are obtained by successive multiplication and subtraction, commencing with a radix of 1000, 10,000 or 100,000, depending on the degree of accuracy desired, by means of the formulæ

$$nd_x = l_x . nq_x \quad \ldots\ldots (12)$$

$$\text{and } l_{x+n} = l_x - nd_x \quad \ldots\ldots (13)$$

In the calculation of nL_x, however, there are some differences of approach. Reed and Merrell use the following relationships for the first ten years of life:

$$L_0 = 0{\cdot}276l_0 + 0{\cdot}724l_1 \quad \ldots\ldots (14)$$

$$L_1 = 0{\cdot}410l_1 + 0{\cdot}590l_2 \quad \ldots\ldots (15)$$

$${}_4L_1 = 0{\cdot}034l_0 + 1{\cdot}184l_1 + 2{\cdot}782l_5 \quad \ldots\ldots (16)$$

$${}_3L_2 = -0{\cdot}021l_0 + 1{\cdot}384l_2 + 1{\cdot}637l_5 \quad \ldots\ldots (17)$$

$${}_5L_5 = -0{\cdot}003l_0 + 2{\cdot}242l_5 + 2{\cdot}761l_{10} \quad \ldots\ldots (18)$$

For ages beyond ten years, they express the values of T_x directly in terms of the sum of the l_x values, rather than follow the customary practice of proceeding first to nL_x and thence to T_x. Thus, if the life table is computed on five-year intervals from age five years to the end of life, the area beyond age x is given by

$$T_x = -0{\cdot}20833l_{x-5} + 2{\cdot}5l_x + 0{\cdot}20833l_{x+5} + 5\sum_{\alpha=1}^{\infty} l_{x+5\alpha} \quad \ldots\ldots (19)$$

If the intervals are ten years, another formula is used.

Except in the very early years of life, both Greville and Kuczinski use considerably simpler formulæ for determining the nL_x values. Greville, taking the relationship

$$nm_x = \frac{nd_x}{nL_x}$$

transforms it to

$$nL_x = \frac{nd_x}{nm_x} \quad \ldots\ldots (20)$$

and uses that equation to obtain his nL_x values. Kuczinski, however, takes the mean number of survivors in the age group and multiplies it by the number of years in the age group—that is, he uses the approximate relationship

$$nL_x = \frac{n}{2}(l_x + l_{x+n}) \quad \ldots\ldots (21)$$

For the first two years of life, Greville uses the formulæ:

$$L_0 = 0{\cdot}15067l_0 + 0{\cdot}84933l_1 \quad \ldots\ldots (22)$$

$$L_1 = 0{\cdot}41l_1 \quad + 0{\cdot}59l_2 \quad \ldots\ldots (23)$$

Kuczinski obtains his L_0 values by making separate calculations for the first year of life and adding, but the subsequent nL_x values are obtained by formula (21), above.

The stationary population in the first year of life in the United States National Office of Vital Statistics tables is obtained by the formula

$$L_0 = l_0 - (l-f)d_0 \quad \ldots\ldots (24)$$

where f is the "separation factor" referred to in connexion with equation (11), while the remaining values are calculated by means of formula (21).

As was noted previously, the 1949 United States abridged tables use a special technique for obtaining the value e^0_{85}. Instead of calculation ${}_\infty h_{85}$, the ratio r_{85}, defined as the quotient of the value of ${}_\infty m_{85}$ based on the actual data by the corresponding value for the stationary population of the life table, is assumed to be the same in the table under construction as in the standard table. In the actual population, ${}_\infty m_{85}$ is merely the general death rate for the age group eighty-five years and over; in the life-table population, it is l_{85} divided by T_{85}, which is the reciprocal of the average remaining lifetime e^0_{85}. Thus, e^0_{85} can be computed by the formula

$$e^{0\ \text{abridged}}_{85} = \frac{e^{0\ \text{standard}}_{85} \times {}_\infty m^{\text{standard}}_{85}}{{}_\infty m^{\text{abridged}}_{85}} \quad \ldots\ldots (25)$$

The life table can then be completed, since

$$T_{85} = l_{85} \times e^0_{85}.$$

The final value required in the presentation of an abridged life table is the average expectation of life. If the nL_x values are obtained, T_x can be derived by accumulating the nL_x column from the bottom of the table upwards. The complete expectation of life at each age is then given by the relationship

$$e^0_x = \frac{T_x}{l_x}.$$

Applicability of Methods to Australian Experience, 1946 to 1948.

To test the applicability of the various methods of abridged life-table construction to Australian experience, a detailed examination of the mortality experience of the period 1946 to 1948 was made. The population and death figures used were those set out by Balmford (1950).

As a first step, appropriate nq_x values were calculated by short-cut methods, and these were then compared with the official nq_x values. Except in the first five years of life, calculations were made in five-year age groups.

In the calculation of the q_x values for the first years of life, estimates were made of the proportion of infant deaths applicable to births of the previous year or years by assuming: (i) that of deaths of infants aged 0 to three months recorded in a quarter, 11% could on the average be allocated to the births of the previous quarter; (ii) that, of deaths of infants aged three to six months in a quarter, 55% arose from births in the preceding quarter and 45% in the quarter before that; (iii) that 50% of the deaths at ages six to nine months and nine to twelve months in a quarter could be related to the births in each of the appropriate quarters; and (iv) that 50% of the deaths at ages one to two years in a year could be related to the births in each of the appropriate years.

This procedure was, of course, unnecessary in applying the formula (10) suggested by Glass.

Table I shows the results of the calculations and the deviations of the abridged rates from the official rates. No values for the "under five years" age group were calculated by means of the Reed and Merrell tables, or by the method used for the 1949 United States Abridged Life Tables.

Results shown in this table confirm the view previously expressed that, provided the basic data are sufficiently large and accurate, satisfactory rates can be deduced directly from the nm_x values. Each of the methods tested gives nq_x values which are reasonably accurate as long as the mortality rates progress steadily, as is the case over the middle span of life. Over this period, the table shows that the deviations from the official

TABLE IV.

Abridged Life-Table, Australia, 1950–1952.

Period of Life Between two Exact Ages. (Years.)	Males.						Females.					
	$_nm_x$	$_nq_x$	$_np_x$	$_nl_x$	$_nL_x$	e^0_x	$_nm_x$	$_nq_x$	$_np_x$	$_nl_x$	$_nL_x$	$^0_{ex}$
0 to 1 ..	n.c.[1]	0·02736	0·97264	100,000	97,674	66·23	n.c.	0·02172	0·97828	100,000	98,154	71·61
1 to 2 ..	n.c.	0·00310	0·99690	97,264	97,087	67·09	n.c.	0·00291	0·99709	97,828	97,660	72·20
2 to 5 ..	0·00140	0·00420	0·99580	96,962	290,275	66·30	0·00102	0·00306	0·99694	97,543	293,682	71·41
5 to 10 ..	0·00081	0·00402	0·99598	96,555	481,805	63·57	0·00057	0·00283	0·99717	97,245	485,535	68·61
10 to 15 ..	0·00072	0·00358	0·99642	96,167	479,975	58·81	0·00050	0·00250	0·99750	96,969	484,240	63·80
15 to 20 ..	0·00154	0·00767	0·99233	95,823	477,277	54·02	0·00064	0·00322	0·99678	96,727	482,857	58·95
20 to 25 ..	0·00209	0·01038	0·98962	95,088	472,970	49·42	0·00085	0·00424	0·99576	96,416	481,060	54·13
25 to 30 ..	0·00175	0·00872	0·99128	94,100	468,450	44·91	0·00103	0·00513	0·99487	96,008	478,807	49·35
30 to 35 ..	0·00189	0·00941	0·99059	93,280	464,207	40·28	0·00139	0·00693	0·99307	95,515	475,920	44·59
35 to 40 ..	0·00262	0·01301	0·98699	92,403	459,010	35·64	0·00198	0·00987	0·99013	94,853	471,925	39·89
40 to 45 ..	0·00391	0·01936	0·98064	91,201	451,590	31·08	0·00292	0·01448	0·98552	93,917	466,185	35·26
45 to 50 ..	0·00654	0·03220	0·96780	89,435	439,975	26·64	0·00456	0·02255	0·97745	92,557	457,567	30·74
50 to 55 ..	0·01099	0·05360	0·94640	86,555	421,177	22·44	0·00684	0·03369	0·96631	90,470	444,730	26·39
55 to 60 ..	0·01806	0·08669	0·91331	81,916	391,827	18·57	0·01012	0·04943	0·95057	87,422	426,307	22·23
60 to 65 ..	0·02820	0·13231	0·86769	74,815	344,827	15·10	0·01569	0·07573	0·92427	83,101	399,772	18·27
65 to 70 ..	0·04296	0·19502	0·80498	64,916	292,930	12·09	0·02543	0·12006	0·87994	76,808	360,985	14·54
70 to 75 ..	0·06533	0·28225	0·71775	52,256	224,405	9·41	0·04253	0·19325	0·80675	67,586	305,277	11·18
75 to 80 ..	0·10222	0·40761	0·59239	37,506	149,312	7·13	0·07317	0·31076	0·68924	54,525	230,265	8·26
80 to 85 ..	0·15352	0·54917	0·45083	22,219	81,217	5·32	0·12545	0·47602	0·52398	37,581	143,182	5·86
85 and over	0·27428	1·00000	—	10,268	36,881	3·59	0·24463	1·00000	—	19,692	77,177	3·92

[1] "n.c.", not calculated.

values are negligible. Once the progression of the rates departs from the underlying assumptions of the methods, as occurs when the progression becomes complex, larger deviations occur. The main example of this occurs in the age range five to nineteen years, where the mortality rates, at first falling rapidly, reach a minimum at about the age of ten years and then begin to increase. Errors also occur where the rates are increasing rapidly.

If it is borne in mind, however, that the principal purpose of this paper is to compare with the official life-table values the results obtained by the four abridged methods, the following conclusions may be drawn from Table I: (*a*) There is some advantage in using equation (8) rather than equation (10) in the calculation of the q_0 values, although this advantage is slight. (*b*) In the calculation of the value $_4q_1$, the methods used by Greville are to be preferred over the Kuczinski formula. (*c*) The results obtained by the method of the 1949 United States Abridged Life Tables are generally less satisfactory than those obtained by the other methods. (*d*) Over the years from five to forty, there is no real difference in the results derived by the Kuczinski, Greville and Reed and Merrell formulæ. (*e*) For ages from forty years onwards, differences emerge. The estimates obtained by the application of equation (3) tend to be somewhat high in the higher age groups, a finding which is in keeping with that of Reed and Merrell, previously noted. Between the results derived from the Greville and the Reed and Merrell formulæ there is little difference, those from Greville's equation (7), above, being slightly the better.

The overall finding is, therefore, that the q_x values estimated by the Greville method are the most satisfactory, although equally accurate results may be obtained by the Kuczinski and Reed and Merrell methods in the age groups from five to forty years.

This conclusion, as here presented, applies only in respect of the years 1946 to 1948; but a similar conclusion may be drawn from an examination of the experience of the years 1920 to 1922 and 1932 to 1934. For each of the three periods, however, it has been found that, to obtain the most satisfactory correspondence between the calculated and the official q_x values by means of equation (7), it is necessary to substitute different values of k. The most appropriate values of k found were as shown in Table II.

It will be seen that in no instance is the value $k=0·09$, used by Greville, the most appropriate. Since the lower the value of k, the lower will be the q_x values in the higher age groups, it will be apparent that abridged tables in which the value $k=0·09$ is used will tend to understate the q_x values for each of the periods shown, with the exception of the table for females in the period 1920 to 1922.

In practice, the most appropriate value of k will depend upon the extent of misstatements in the population and deaths in the higher age groups, and upon the methods of graduation used in the preparation of the official life tables. No hard and fast rule can thus be laid down for the most appropriate value to be used. If the mean of the values obtained for the periods reviewed is taken, it would appear that a value of $k=0·11$ for both males and females would give results which are generally somewhat closer to the official figures than are the results obtained with the value $k=0·09$.

Once the q_x values have been calculated, the life table can be readily completed to the point of obtaining the l_x values. It remains, then, to calculate the years lived by the life-table population at each age or during each age group, and from these figures the mean expectation of life.

For the first and second years it is found that very accurate results can be obtained from an application of equations (22) and (23). The comparisons shown in Table III of the L_x values derived from the official life tables for the period 1946 to 1948 with the values estimated by means of these equations may serve to demonstrate the point. In each case the radix taken was 100,000.

The maximum error in the figures for the abridged table is 0·15% and the overall error in L_0 is not materially changed if equation (22) is varied to read

$$L_0=0·15l_0+0·85l_1$$

which makes computation somewhat simpler.

The remaining $_nL_x$ values may be calculated with little error either by equation (20) or by equation (21). Since, in practice, $_nd_x$ values are frequently omitted in the presentation of abridged life tables, the latter is often preferred. The error involved in applying this equation is very small—in the case of the 1946 to 1948 experience usually less than 0·5%—and has a negligible effect on the mean expectation of life.

Abridged Life Tables for the Inter-Censal Years.

The discussion up to this point has been related to years in which the results of a census for the mid-year of the selected period are available. The finding that the Greville method, with an adjusted value of k, will give reasonably satisfactory $_nq_x$ values is useful, in that it enables abridged tables to be calculated in advance of the official tables for periods centred on a census year. Frequently, however, it is desirable for public health or other reasons, to follow the course of mortality during inter-censal years, and abridged life tables afford a convenient method of doing this.

Population estimates by age and sex are regularly published by the Commonwealth Statistician, and these may be used as a substitute for an actual census count. Their use introduces a complication. Because of the tendency for old persons to overstate their ages, deaths recorded in the higher age groups are unduly high and the population estimates are accordingly affected. This defect in the recorded statistics has led the statistician to publish estimates of persons aged seventy-five years and over only in grouped form, although they are initially calculated by single ages. It is probable, however, that the estimates of persons aged eighty-five years and over are not

seriously in error when considered in the grouped form. Thus, while a reasonably satisfactory central death rate for the whole age group can be calculated, corresponding quinquennial rates cannot be obtained.

It will not, therefore, be possible to apply the Greville formula to the rates for the higher age groups. An alternative procedure must be found. This is already available in the method adopted for the age groups eighty-five years and upwards in the compilation of the 1949 United States Abridged Life Tables, equation (25). There are disadvantages in the use of this equation, since the ${}_{\infty}m_{85}$ value is affected not only by changes in mortality but by changes in the age distribution of the population within the age group as well. However, the effect on the mean expectation of life of the error resulting from the use of the equation is slight, and there appears to be little reason to seek an alternative method of estimating the mean expectation of life at the age of eighty-five years and hence the ${}_{\infty}L_{85}$ value. Another possibility is to use the mean expectation of life at eighty-five years as shown in the latest official life tables, a procedure which may be justified on the ground that changes in the mortality experience in the higher age groups are not usually very great, even over a lengthy period of time.

During recent years, the population of Australia has been considerably augmented by the influx of immigrants. As the flow has not been regular, there is some danger that, by selection of the population estimates for the central year of a series of years as the basis for the calculation of an abridged life table, bias may be introduced which distorts the results. It is considered, therefore, that abridged life tables for Australia for years from 1948 onwards should be based, not on the population estimates of a particular year, but upon the arithmetic mean of the estimates for each age group over the years to which the table refers.

An Abridged Life Table for the Period 1950 to 1952.

It remains now to demonstrate the application of these findings in the construction of an abridged life table. For this purpose, the experience of the years 1950 to 1952 has been selected. Where appropriate, the ${}_{n}m_{x}$ values have been based on the mean population of the three years.

The procedure adopted may be summarized as follows: (*a*) ${}_{n}m_{x}$ values were calculated for the specified age groups from two years of age upwards; (*b*) q_0 and q_1 values were found, by the use of equation (8) or a similar equation, and estimation of the proportion of infant deaths applicable to the births of the previous year or years in the manner described on page 590; (*c*) other ${}_{n}q_{x}$ values up to the age of eighty-five years were calculated by means of equation (7), k being taken as 0·11; (*d*) q_{85} was clearly equal to unity, since all survivors to age eighty-five years must eventually die; (*e*) ${}_{n}l_{x}$ values were calculated from the relationship

$$l_{x+n}=l_{x}\cdot{}_{n}p_{x} \text{ (where } {}_{n}p_{x}=1-{}_{n}q_{x})$$

and commencing with a radix of 100,000; (*f*) ${}_{n}L_{x}$ values to age eighty-five years were estimated by means of equations (21), (22) and (23); (*g*) e^{0}_{85} was computed from equation (25), the official life tables for 1946 to 1948 being taken as the standard, which enabled the T_{85} ($=\infty L_{85}$) to be calculated; (*h*) finally, the remaining e^{0}_{x} values were estimated from the relationship

$$e^{0}_{x}=\frac{T_x}{l_x}.$$

The resultant abridged life table is shown in Table IV.

As a matter of interest, the abridged life table may be compared with the official life tables for the period 1946 to 1948. Whereas the mean expectation of life in the period 1946 to 1948 was 66·07 years for males and 70·63 years for females, by the period 1950 to 1952 it had increased to 66·23 and 71·61 years for males and females respectively. Thus, while the expectation of life for females increased over the period by almost one year, the male expectation increased by only one-sixth of a year.

The explanation of this difference is to be found, for the most part, in the divergent movements in the male and female mortality rates between the ages of fifteen and thirty years. In each of the five-year age groups included within this range, the rates for males increased from 1946–1948 to 1950–1952; in contrast, the rates for females fell. Deaths from violence or accidents—in particular from road accidents—were the principal cause of the increase. These increased deaths affected the rates to such an extent that the very considerable savings in male lives effected in the early age groups were all but offset.

Summary.

Four well-known methods of constructing abridged life tables have been considered and the principles adopted in each discussed. In applying them to Australian experience, it is found that satisfactory results are obtained by the adoption of a modified version of the method suggested by Greville. An example of an abridged life table, constructed by this modification of Greville's method and based on Australian experience over the years 1950 to 1952, is presented.

Acknowledgements.

My thanks are due to Mr. S. W. Caffin, Assistant Commonwealth Actuary, for some constructive comments on this paper, and to Dr. A. J. Metcalfe, Commonwealth Director-General of Health, for permission to publish it.

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Reviews.

Current Therapy, 1954: Latest Approved Methods of Treatment for the Practising Physician. Edited by Howard F. Conn, M.D.; 1954. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical), Limited. 10¼" x 8", pp. 930. Price: £5 4s. 6d.

"Current Therapy" has been reviewed every year since it first appeared in 1949. Howard F. Conn has been the editor from the beginning. There is a very large number of contributors. Several may give their method of treating any one disease, if it is an important one. The large double column type makes the book easy to read in spite of its size and the multiplicity of its subjects. Clear directions for treating all medical diseases can be quickly found, and even surgical, gynæcological and skin conditions are dealt with.

Some of the measures advocated carry less conviction than others, but the informed reader can and should draw upon his judgement and experience, and adapt or modify those of doubtful wisdom or safety. As an example of an outstanding contribution, that of Viets on *myasthenia gravis* may be cited. Anyone who has a case of this disease should contrive to read it.

Revision seems to have been adequate, and well-proved older methods remain. It is questionable whether many would want to buy such a bulky and expensive book every year. It has, however, many good points, and the authority and common sense of most of its contributors make a good impression. It can be recommended to him who has not so far read it. Its acquaintance thus made, he can decide for himself how often to buy it.

The Biochemistry of Clinical Medicine. By William S. Hoffman, Ph.D., M.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 9½" x 6½", pp. 702, with 58 illustrations.

The increasing use of biochemical knowledge and techniques in the study of disease processes makes it very difficult for the physician to keep himself up to date. There was need for a book which would give a clear and concise account of the applications of modern biochemistry to medicine. This need is to a large extent fulfilled by W. S. Hoffman's new book. The author states in his preface:

"Its specific purpose is to acquaint the students and practitioners of the various branches of medicine with the qualitative and quantitative alterations of the biochemically determinable body constituents that occur in the diseased state and to show them how to utilise that information in diagnosis, prognosis and treatment." In this purpose the author succeeds very well in those parts of the field of which he treats. The book is not a text-book of biochemistry. The author assumes that the reader has a small acquaintance with chemistry, and organic chemical formulæ are given rarely, and the explanations have been made comparatively simple, sometimes too simple. The first 117 pages give a general account of proteins, carbohydrates and lipids with stress on the clinical aspects. An unusual feature is the presentation of complete clinical essays on diabetes mellitus, Bright's disease, hepatitis, cirrhosis and gout. In these all the relevant biochemical data are put together. There is a long and very good section on water and electrolytes. The blood and blood diseases, and the kidneys, liver and endocrine glands are considered at some length. The vitamins are treated reasonably well. A chapter which seems somewhat out of place deals with the nature of isotopes, but with little of their use in medicine and biochemistry. This section is well done and interesting in a general way.

The book can be thoroughly recommended to all medical men, but particularly physicians, as a good account of the present state of the use of biochemical knowledge and methods in medicine.

Lectures for Nurses. By G. N. Burbridge, S.R.N.; Fifth Edition; 1954. Sydney: Australasian Medical Publishing Company, Limited. 7½" × 5", pp. 336, with two text figures. Price: 17s. 6d.

On reading Matron Burbidge's book, a feature which appears most striking is how much detail has been included in such a comparatively small compass. Nevertheless, the critical reader must remember that this is a book dealing with the practical side of nursing, and so it does not attempt to be a text-book of medicine. It tells a nurse all she needs to know about the many practical procedures of her work, whether they are the simpler points of bandaging or the more complex problems such as the care of the unconscious patient. An unusual feature of the book is the provision of the blank pages for memoranda which should prove very useful.

The preface states that the book originally covered the course for a preliminary training school, but by the inclusion of general training lectures the book now covers the entire work of a first year nurse. It certainly does this, and has now run through five editions in eighteen years and is recognized at training hospitals throughout the country. Due emphasis is given to the demeanour of the nurse herself; thus "The Ethics of Nursing" is the subject of the first lecture, and this is followed by the topic "Her Attitude Towards Patients". Further, the importance of her own personal habits and hygiene is mentioned, it being pointed out that by care and cleanliness the percentage of nurses who contract infectious diseases from their patients is low—a point that cannot be stressed too strongly in the face of phobias and old wives' tales that at times frighten and deter the young nurse.

Tutor sisters not familiar with this work can avail themselves of it with confidence, as it will give them a basis for the course of lectures, and they can recommend it to all nurses under their tuition, knowing they are referring them to a book that will be an aid to them for their examinations and for reference in their work after graduation.

Food Poisoning and Food Hygiene. By Betty C. Hobbs, B.Sc., Ph.D., Dip.Bact.; 1953. London: Edward Arnold and Company. 9" × 6", pp. 182, with 44 illustrations. Price: 14s.

In the preface to this book the author indicates that it was written "with a genuine desire to bring the essential facts about food poisoning and its prevention to all those in the kitchen of every type of establishment" and in this way to reduce the incidence of food poisoning.

The book is in two parts. One deals with bacterial food poisoning and food infection, and the other deals with food hygiene in the prevention of bacterial food poisoning. Food poisoning due to natural or chemical poisons is stated to be negligible and is not referred to again. After a brief historical survey there is a chapter on elementary bacteriology followed by chapters on bacteria that cause food poisoning, bacterial reservoirs, ways of spread, examples of outbreaks of food poisoning and diseases caused by bacteria in food.

In the second part the role of the food handler in the contamination of food is discussed. Methods of food storage to control the multiplication of organisms are described in detail. The design, cleansing and sterilization of shops, kitchens and food preparation equipment are discussed. There is a chapter on vermin control. The final chapters deal with legislation and education. The text, illustrations, photographs and tables are clear and concise; clear and definite bacteriological reasons are given for the various recommended methods of food handling.

This book is recommended for medical officers of health and health inspectors. It should be of particular interest to teachers of food-handling techniques and to anyone engaged in handling and preparing food. It should also be of interest to medical practitioners and school teachers.

Books Received.

[*The mention of a book in this column does not imply that no review will appear in a subsequent issue.*]

"Symposium on Human Factors in Equipment Design", edited by W. F. Floyd and A. T. Welford; 1954. London: H. K. Lewis and Company, Limited. 9½" × 6½", pp. 140, with 34 illustrations. Price: 21s.

Published by the Ergonomics Society.

"La Voix", by Edouard Garde; 1954. Paris: Presses Universitaires de France. 7" × 5", pp. 128, with 15 text figures. Intended for the general public.

"Refresher Course for General Practitioners: Specially Commissioned Articles from the British Medical Journal: Second Collection, January, 1951, to March, 1952"; 1954. London: British Medical Association. 8½" × 6", pp. 480, with 96 illustrations. Price: 25s.

Contains articles reprinted from the *British Medical Journal*; this is the second collection.

"Heart Disease and Industry: With Particular Reference to Workmen's Compensation Cases", by Meyer Texon, M.D., with forewords by Samuel A. Levine, M.D., and Hubert Winston Smith, LL.B., M.D.; 1954. New York: Grune and Stratton. 10" × 7", pp. 336. Price: $7.50.

The opinions and conclusions presented are based on the author's "objective and impartial evaluation of all the medical data available".

"British Medical Bulletin", Volume X, Number 2, 1954. London: The British Council (Medical Department). 11½" × 9", pp. 102, with 38 illustrations. Price: 25s.

This number deals entirely with tuberculosis, the introduction by P. D'Arcy Hart being followed by fifteen chapters devoted to different aspects of the subject.

"British Medical Bulletin", Volume X, Number 1, 1954. London: The British Council (Medical Department). 11½" × 9", pp. 82, with three text figures. Price: 25s.

This number deals with reactions to injury. The introduction is followed by fourteen contributions.

"Cancer: Diagnosis, Treatment and Prognosis", by Lauren V. Ackerman, M.D., and Juan A. del Regato, M.D.; Second Edition; 1954. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 10" × 7", pp. 1202, with 725 illustrations, 23 in colour. Price: £11 16s. 3d.

First published in 1947.

"Fundamentals of Anesthesia: Prepared under the Editorial Direction of the Consultant Committee for Revision of Fundamentals of Anesthesia, a publication of the Council on Pharmacy and Chemistry of the American Medical Association"; Third Edition; 1954. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical), Limited. 9½" × 6½", pp. 296, with 81 illustrations. Price: 57s.

The aim is to set forth (*a*) the basic scientific principles on which anæsthesiology is based, (*b*) the technical procedures necessary to the application of these principles, and (*c*) the application of the principles to the management of patients.

The Medical Journal of Australia

SATURDAY, OCTOBER 9, 1954.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

"SOMETHING FOR EVERYBODY, NOT EVERYTHING FOR SOMEBODY."

At the fourth annual meeting of the Medical Editors of the World held at The Hague, Holland, on September 7, 1953, a paper was read by Dr. Joseph Garland, who is editor of *The New England Journal of Medicine*. His contribution was entitled "The Function of a General Medical Journal". Dr. Garland stated in most convincing terms the views which have been expressed from time to time in the editorial columns of this journal. We should be failing in our duty to our readers if we were not to present a short summary of what he said. His paper is published in the May, 1954, issue of the *World Medical Journal*. This is the official journal of the World Medical Association, and appears every month, printed in English, French and Spanish. It is the successor to the *Bulletin*, previously published by the World Medical Association. Dr. Garland points out that most of the 8000 or 9000 journals currently published in the world of medical letters may be divided into three groups of ill-defined boundaries and overlapping functions. These groups are composed of the purely, or nearly purely, scientific journals of research, the journals devoted to the practice of specialties, and the general or all-purpose journals. The journal edited by Dr. Joseph Garland is one of the last-mentioned group; THE MEDICAL JOURNAL OF AUSTRALIA is another member of the group, and so is the *British Medical Journal*, which is received with THE MEDICAL JOURNAL OF AUSTRALIA by every member of the British Medical Association in Australia. In every group of professional people—and indeed in any group of persons belonging to any body or association—there will always be found some who have fault to find with what is provided for them. This is not altogether a bad thing, because it does make those responsible for the provision ask themselves whether they are doing the best that can be done in all the circumstances.

Dr. Garland points out that journals of his three groups may be the nurslings of societies or associations, either special or general, and may derive much or all their nutrition from the maternal fount. As a provisional definition for the opening of his discussion, he describes the function or functions of a general journal with what he calls deliberate over-simplification, as "a journal presenting to a variety of readers a varied content". Its aim, he states, is to keep them informed of progress in the scientific and clinical aspects of preventive and therapeutic medicine and of public health. It serves as a newspaper in presenting and analysing information on medical affairs of current interest, including economic, social and political problems. If it is the official publication of a society, it has the duty of reporting to the members of the society matters pertaining to its activities. Some journals, he declares, are mere bulletins, doing little more than discharging their obligations to their societies. Others, the majority, publish papers that have been presented at society meetings as well as similar material voluntarily submitted or solicited. A few journals may offer to their readers in the course of a year many papers of intrinsic value, representing real contributions to medical knowledge. To decide what is most important and where the balance should lie is a problem which has to be solved for each journal. It is here that the responsibility of an editor lies. Referring to his own journal, *The New England Journal of Medicine*, Dr. Garland states that the editors maintain that the general medical journal, to fulfil its most vital function (let these three words be emphasized), must also be in part a scientific journal in which the independent investigator, after his work has passed a careful scrutiny, may ethically proclaim its results. Referring to articles which are a review of the literature, he states that an attempt is made to encourage writers to accept the concept that the reviews should be authoritative critical analyses of a subject rather than merely reviews of the literature. He finds it impossible "to disabuse many of them of the paradoxical belief that their kite will not fly without a bibliographic tail long enough to hold it to earth". Most medical editors will be in sympathy with him. It is interesting to note that the occupations of the readers of *The New England Journal of Medicine* comprise almost every form of endeavour in which medical practitioners engage. A *questionnaire* was circulated amongst a group of some thousands of subscribers and the returns showed that 27% were interested in internal medicine, including dermatology and syphilology; surgery came next with 23%, and general practice third with 21%. Dr. Garland suspects that some of the internists and surgeons are general practitioners as well, with a flair for the more pretentious classifications. All the other specialties were represented in smaller percentages. The result of Dr. Garland's *questionnaire* convinces him that there is a catholicity of tastes and of occupations among the readers of a general medical journal.

The experience of the editors of all general medical journals has been reflected in connexion with *The New England Journal of Medicine*. Dr. Garland has found that some slight pressure has been exerted occasionally by

"volunteer advisers" who are themselves not necessarily practitioners. This has been to the effect that since most of the readers were general practitioners (in the case of *The New England Journal* not strictly accurate) the journals should publish more practical papers, the inference being that it should be brought down to the supposed level of these general practitioners. Dr. Garland agrees with the editor of the *British Medical Journal* that to consider a journal as being published primarily for the general practitioner, with the implication that he must be written down to, is defeating the very purpose of all present efforts to restore the practitioner to his rightful position as full partner in the enterprise of preventing disease and restoring health. The *British Medical Journal* gave an inclusive answer to the question of how a proper selection of original papers should be made for publication. It was to the effect that the fundamental function of the British Medical Association was "to promote the medical and allied sciences". This statement suggests to Dr. Garland that it deals with the fact which we cannot change, even if we wish to, that constructive medical literature must follow the channels in which the streams of medical progress seemed destined at the time to flow. Medicine has become increasingly a science, and while the art of medicine needs more than ever to be cultivated, to ignore its science is to seek out the backwaters and avoid the main current. In these pools of intellectual indolence will be found the lotus-eaters where

> . . . in the stream the long-leaved flowers weep,
> And from the craggy ledge the poppy hangs in sleep,

but this will be at the cost for the individual of abandoning the company of those who are trying to find better ways of serving mankind. The *British Medical Journal* stated in an editorial: "To those who find the substance of some original articles hard to digest, we can but offer apologies on behalf of modern medicine, the hard taskmaster of us all, and in the last resort, provider of the matter which fills these pages."

Dr. Garland makes an important point when he states that it is the function of all medical literature to present its messages literately and clearly. No reasonable care in the selection and arrangement of the words and the sentences that are to be the vehicles of the meaning should be neglected. The first and second drafts, at least, of any article or editorial destined to reach posterity by appearing in the pages of our journals should, he believes, be written with a lead-pencil that has an eraser as its silent partner. Then, if legible, it may be turned into typescript and laid reverently away in a desk drawer to ripen.

Practically all that has been written here may be applied to our own MEDICAL JOURNAL OF AUSTRALIA. Our journal is not the official organ of the Branches of the British Medical Association in Australia, but it is owned indirectly by the Branches through the Australasian Medical Publishing Company, which consists of members elected by the Branches. Here in Australia we have factors which do not obtain in thickly populated centres, such as the New England district of the United States, or in London where the *British Medical Journal* is produced. Our isolation is not as great as it has been in years gone by, but we still have to learn to stand on our own legs and to be self-sufficient in the matter of medical publication. This journal has always set its face against the publication of Australian research in journals overseas. For this reason articles have from time to time appeared in THE MEDICAL JOURNAL OF AUSTRALIA which may have had an esoteric flavour. No apology is ever made, or need ever be made, for the publication of these articles, because, as Dr. Garland puts it, the purpose of the medical reader, it may be hoped, is to broaden his view, and not merely to find a simplified set of diagnostic and therapeutic guides for earning his bread and butter. The specialist, he writes, reads to learn about other specialties and about medical progress in general, the general practitioner to gain some familiarity with the advances that medicine is making all along the line. Each must have some curiosity, if he would avoid drying up like a pea in a pod; he should concern himself with the social, economic, political and cultural aspects of his profession, as well as with its art and its sciences. We would agree with Dr. Garland that there is no absolute answer to what a journal content should be or what functions it should discharge. The *British Medical Journal* stated that it was a journal which aimed at presenting the best of British medicine in order to promote the medical and allied sciences. It tried to provide each week "something for everybody, not everything for somebody". Those amongst us with utilitarian minds need not be heeded. We may conclude with Dr. Garland's final paragraph:

> The function of our journals is to inform on matters of current interest, to instruct in the ever-changing law of medicine, to stimulate interest and invite thought in many subjects. The function of the editors in striving to accomplish these objects is to secure material that will mark the path of progress, that will provide variety and maintain balance.

AN ANNUAL BRANCH MEETING WITH A DIFFERENCE.

THE formal account appearing in this issue of the annual meeting of the Queensland Branch of the British Medical Association really presents only part of the picture. For the sake of those who sometimes succumb to despair in relation to annual Branch meetings, the rest of the picture should be presented. The fact is that the annual meeting of the Queensland Branch was, on all counts, a success. Since this is the third time in succession that this has happened in Queensland, and since Branch annual meetings are not in the habit of being successful without a reason, the matter can well stand inquiry. Up till three years ago the Queensland Branch shared the common, rather depressing experience of having only the loyal and enthusiastic few turning up to transact the business of the annual meeting and to hear the President's address. Not satisfied with this, and inspired by the success of the formal meetings of the Australasian Medical Congress (British Medical Association) held in Brisbane in 1951, the Branch Council adopted a new scheme. It was decided to hold the annual meeting in two parts. At the first part, to be held at some time during the day, all the formal business would be dealt with and the meeting adjourned. In the evening, with rather more ceremony, the new President would be inducted and deliver his president's address. Distinguished citizens other than members of the medical profession would be invited, academic and evening dress would be called for, and supper would be served. To facilitate this

general arrangement and also to encourage the attendance of members outside the metropolitan area, the meeting was arranged first for Friday night and subsequently for Saturday night. In 1952 and 1953, the meeting in the evening was held in the Assembly Hall of the Brisbane Grammar School, and at the meeting just held it moved to the main hall of the new University of Queensland at St. Lucia. At this latest meeting, which was held in the presence of His Excellency the Governor of Queensland, Sir John Lavarack, and Lady Lavarack, some 400 people were present, of whom 148 were members of the British Medical Association and 250 were guests representative of the civic, professional and cultural life of Brisbane. The little ceremonies appropriate to a formal academic occasion were observed, and the development of Branch tradition was offered encouragement by the reading of the Branch honour roll. For the first time, the Bancroft Oration (with Sir Alexander Murphy as orator) was successfully incorporated into the meeting. Supper was served in the impressive entrance hall of the University, and the evening was generally accounted a success. It cannot be assumed that the same type of meeting would necessarily be a success if adopted by the other Branches; but the Queensland Branch Council is to be congratulated on the enterprise that started the new type of meeting, on the thorough planning and vigorous organization that went into the running of the meeting, and on the results achieved. It has shown that an annual Branch meeting can be regarded as important not only by a significant proportion of Branch members but also by the leaders of the general community.

Current Comment.

POST-OPERATIVE PSEUDOMEMBRANOUS ENTEROCOLITIS.

POST-OPERATIVE pseudomembranous enterocolitis is a relatively rare surgical complication, but in recent years it has received an increasing degree of attention, and the belief has developed that its occurrence is in some way related to recently adopted methods of therapy. Important features of the condition are brought out in a study by Jacqueline D. Pettet, Archie H. Baggenstoss, William H. Dearing and Edward S. Judd, junior,[1] of 107 cases of post-operative pseudomembranous enterocolitis occurring from 1925 to 1952 at the Mayo Clinic. In all cases included the diagnosis was confirmed at autopsy, and in all the condition followed a surgical procedure. In 13 of the cases the lesions were localized to small segments of the bowel and were not considered as important factors in the cause of death. In 94 cases the lesions were extensive and were thought to be primary factors in causing the death of the patient. In 87 of the 94 cases of extensive disease the operative procedure involved opening into the peritoneal cavity. In 77 cases the gastro-intestinal tract was directly involved in the surgical procedure. There was a wide variety of lesions for which these patients underwent surgical procedures, but the commonest lesion found was carcinoma of the colon (91 of 94 patients). There was nothing statistically significant about the age and sex incidence. As regards the clinical course, the patients appeared to withstand the operation with little or no more difficulty than would be expected in the average patient undergoing the operation. After an apparently uneventful period, varying in length from a few hours to many days—with a mean of three and a half days—the patient showed signs or symptoms of some complication. From that point on, the clinical course became rapidly and progressively worse until death, which occurred in a few hours to eleven days. Cramping abdominal pain and distension were most often the first symptoms noted, either alone or associated with nausea and vomiting or diarrhœa. In most of the cases, shock was a predominant finding during the [illegible] few days of life.

There have been two suggestions of possible ætiological factors in the production of this lesion. The first is that of Penner and Bernheim, who believed that shock was the one common condition present in all their cases, and the second is that of Reiner and his associates, who suggested that "Aureomycin" and chloramphenicol were responsible for the production of the lesion. The findings of Pettet and her colleagues do not support either of these theories, and it must be acknowledged that, in fact, the ætiological factors are not understood.

[1] *Surg., Gynec. & Obst.*, May, 1954.

THE HYPOMETABOLIC STATE.

BETWEEN the normal individual and one with true hypothyroidism or myxœdema there is a state which can easily be overlooked. B. A. Watson[1] calls this the hypometabolic state, and he describes the symptoms found in 201 cases. There were 154 female and 47 male subjects. The greater number of cases were in the age group thirty to sixty years, but the condition occurred in persons aged from seventeen to seventy-nine years. The commonest symptom and often the presenting symptom was fatigue occurring in the morning usually after a sound sleep. As the day passed the patient felt progressively better, except that in some instances mid-afternoon fatigue was noted. At night the patient felt the best of any time during the twenty-four-hour period. Cold intolerance, cold and often numb hands and feet, brittle nails, dry skin and lack of perspiration are also usual in this condition. There is generally a slow pulse with a low awakening temperature. The basal metabolic rate is often but not always low. Menstrual difficulties are common, and these are lessened with thyroid therapy. Gastro-intestinal disturbances are frequently found. A low level of serum-bound protein iodine is an excellent laboratory criterion if the test is available. For treatment desiccated thyroid is given. If the symptoms are relatively mild and the basal metabolic rate is above −10%, the initial dose is one grain; if the symptoms are moderately severe and the basal metabolic rate is below −10%, one grain is given after breakfast and lunch. If the symptoms are severe and the basal metabolic rate is below −20%, the initial dose is two grains after breakfast and one grain after lunch. After ten days to two weeks the dose is increased or decreased as clinical judgement indicates. Of the 201 patients in Watson's series, 117 recorded disappearance of or great decrease in their symptoms. Watson points out that cessation of treatment leads to a return of symptoms, and enough thyroid should be given to alleviate the symptoms regardless of the basal metabolic rate.

MODERN CHEMOTHERAPY OF INFECTIOUS DISEASES.

WITH the big increase in the number of synthetic drugs and antibiotics there has been an extraordinary increase in the amount of drugs prescribed. This increase is discussed by W. H. Feldman[2] particularly in relation to the chemotherapeutic drugs. He considers that the general acceptance during the past decade of chemotherapeutic agents as a means of treating a long list of infectious diseases is probably the most significant development in modern medicine. This acceptance is related to (i) general effectiveness, (ii) convenience, (iii) frequent discovery of new substances, particularly antibiotics, (iv) promotional activities of those who produce and sell such products, and

[1] *New York State J. Med.*, July 15, 1954.
[2] *Dis. Chest*, July, 1954.

(v) the naïve confidence of the non-medical public and the non-critical acceptance by many physicians of the enthusiastic accounts of the performance of the so-called miracle drugs. As a result the per-capita consumption of the newer therapeutic substances is probably second only to that of aspirin, the following production figures for the United States for a few of the more commonly used drugs being of interest: aspirin, 13,481,000 pounds; salicylic acid, 7,842,000 pounds; vitamins, 2,546,000 pounds; barbituric acid derivatives, 789,000 pounds; "sulpha" drugs, 6,411,000 pounds; antibiotics, 1,286,000 pounds. The world production of crystalline penicillin is approximately 300,000 kilograms annually. This amount is sufficient for 4,000,000 patients per month. Chloramphenicol, during five years from the time of its discovery in 1947, was prescribed for more than 8,000,000 people.

That chemotherapeutic drugs are being used carelessly has been indicated by many writers. So far there has not been discovered any effective chemotherapeutic substance that is devoid of potential toxicity. After discussing the hazards of antimicrobial therapy Feldman goes on:

> To use chemotherapeutic agents indiscriminately or promiscuously is not only empiricism but a serious dereliction of professional responsibility. During the past decade extensive experience by competent investigators and clinicians has yielded much important information concerning the practices of chemotherapy. As a consequence guideposts are available whereby the physician can prescribe these modern therapeutic agents with reasonable assurance that no serious toxic consequences will ensue. Clinical use of chemotherapy should be restricted for specific medications in doses that can be safely tolerated and for periods of time no greater than are required to suppress or eliminate the offending microorganisms. In other words, the use of these drugs should be based on a definite diagnosis indicating their need. They definitely should not be employed as therapeutic panaceas for minor nondescript ailments. Otherwise a simple or mild disease may be converted to one that is serious and potentially fatal.

The possibility of latent effects of drug therapy received months or years previously must be recognized. If the widespread use of chemotherapy continues, with a considerable percentage of the population receiving antimicrobial agents intermittently throughout life, structural changes of grave significance at present unpredictable may eventually ensue.

CAT-SCRATCH DISEASE.

A CLINICAL ENTITY characterized by subacute regional lymphadenitis, frequently following a scratch of a cat, was recognized about twenty years ago by Debré in France and, independently, by Foshay in the United States. Cases have been described from many countries, but it is still not well known. K. Loewenthal[1] has described a case and given a detailed account of what is known about this disease. Cat-scratch disease can be traced most often to contact with or injury inflicted by a cat, but in many cases there is no history of direct contact with a cat. Cats suspected of transmitting the disease have, as a rule, been healthy. In most instances the skin is the portal of entry for the virus, but in one form the conjunctiva is probably the site of primary infection. The cutaneous form is very often initiated by a primary lesion appearing from three to seven days afterwards at the site of the inoculation. The lesion may appear as an inflamed excoriation, an indolent ulcer, a papule or a boil. After a variable time, from three to thirty days, regional lymphadenopathy without evidence of lymphangitis appears. The infected lymph glands are tender and large, and in some cases abscesses appear, the purulent material from which is sterile on bacteriological and mycological examination. General malaise, headache and nausea are common systemic manifestations. Occasionally skin eruptions of various types appear. Signs of meningeal irritation and the symptoms of encephalitis sometimes occur. In a rare form well-defined conjunctivitis with enlargement of the pre-auricular lymph nodes is seen. Here the conjunctiva is probably the site of the primary infection.

In the majority of cases a history of a cat scratch or cat bite followed by the symptoms and signs mentioned is sufficient for the diagnosis. However, the local lesion may be absent or overlooked. The adenitis without lymphangitis is suggestive. Laboratory tests are helpful only in a negative sense. The main aid in the diagnosis is the intradermal test with the specific antigen when this is available.

Complete recovery may not occur for many months, the enlargement of the lymph glands outlasting the acute manifestations. The virus responsible for the disease belongs to the psittacosis-lymphogranuloma group. It is believed by some that the broad-spectrum antibiotics, such as oxytetracycline, chlortetracycline and chloramphenicol, shorten the course of the disease and prevent suppuration of the lymph nodes, but this is debatable. Penicillin probably has no value in treatment.

[1] *New York State J. Med.*, July 15, 1954.

AN INTERESTING PIECE OF RADIOLOGICAL RESEARCH.

THE receipt from Sweden of a monograph entitled "Temporary Unilateral Occlusion of the Pulmonary Artery" by Björn Nordenström[1] draws attention to the lack of facilities for research in the radiological field in Australia. Research workers here are poorly paid, and there is no department available for work such as that covered by workers in Sweden, where radiological departments are equipped with animal houses and separate pathological units for the conduct of research. A vast amount of time and skill must have been devoted to the preparation of this monograph, which describes experiments carried out on dogs before similar work was tried on human beings. After a description of the anatomy of the pulmonary circulation, the method of the introduction of the rubber catheter with occlusal balloon into the artery is detailed. With the subject under narcosis the catheter is introduced into the jugular vein and passes through the heart chambers and into the pulmonary artery under fluoroscopic control. A 30% solution of iodopyracet ("Umbradil") is used, and the amount required is judged by examination under the screen. For catheterization of the right artery the subject lies in the prone position, and for the left artery the left lateral position is used. No serious complications occurred in the human beings examined. During the examination the blood pressure was carefully recorded and kymographic tracings were made. Conditions such as arterio-venous aneurysms, pulmonary emphysema, infarctions and atelectasis were demonstrated. Further work in this field will be watched with interest.

RESECTION IN DIVERTICULITIS.

DIVERTICULITIS of the sigmoid colon has claimed increasing attention with the increasing age in the population, and in particular surgical treatment has come more to the fore. This is emphasized by R. M. Moore and O. T. Kirksey[2] in a review of the present treatment of sigmoid diverticulitis with special reference to the use of one-stage resection in selected cases. As it is now generally recognized that proximal colostomy alone is more often palliative than curative, it is concluded that actual excision of the diseased tissue is the proper goal. With the advent of intestinal antisepsis this has become possible in many cases as a single-stage procedure. Moore and Kirksey report that in a series of 22 cases in the past five years transverse colostomy alone was performed in eight. In two of these cases resection of a sigmoido-vesical fistula is planned for later, one was lost to the follow up, and in the remaining five the critical general condition has prevented any

[1] *Acta Radiologica*, Supplement 108, 1954.
[2] *Ann. Surg.*, June, 1954.

further surgery. In the other 14 cases a resection was performed after adequate preparation. In two a preliminary colostomy and in five a complementary caecostomy was employed. There was no operative death or hospital mortality in these cases; and since operation none of the patients has had a recurrence of symptoms due to diverticulitis. It is advised that one-stage resections and anastomosis should be restricted to cases in which adequate preparation is possible and in which the sigmoid and descending colon can be mobilized without injury to the adjacent organs. Cases in which the inflammatory process extends distally into the rectum so that the anastomosis would be difficult to perform are not considered good cases for primary resection. Nor are cases in which abscess or actual peritonitis is found or those in which a sigmoido-vesical fistula is present.

MOUNT EVEREST IN UTERO.

The environment of the fœtus *in utero* corresponds to an atmosphere in which the partial pressure of oxygen is the same as at a level three-quarters of a mile above Mount Everest—that is, at 33,000 feet, or an oxygen pressure of 40 millimetres of mercury. Such an environment would kill an adult in a few minutes. The fœtus compensates, as an adult does, by an increase in hæmoglobin value up to approximately 17 grammes *per centum* at birth; also, the hæmoglobin is able to give off oxygen more rapidly. If the fœtal oxygen supply is depressed, the fœtus cannot endure for more than a few minutes, and anoxæmia is by far the most common cause of death before birth and in the first few weeks of extrauterine life. The facts are brought out in a paper with the title "Mount Everest in Utero", in which Nicholson J. Eastman[1] traces the history, physiology and clinical symptoms of lack of oxygen tension at high altitudes. He states that in the United States of America the number of infants who die each year in association with the birth process is approximately 150,000. A greater tragedy than the actual death of a newborn baby is the birth of a baby with cerebral palsy who continues to grow and develop physically, but lacks the cerebral centres which govern speech, muscular coordination and reason. In one study an incidence was encountered of 5·9 cases per 1000 liveborn infants who survived one month; that is, in 3000 deliveries about 18 babies would develop cerebral palsy. The main ætiological factor is now believed to be intrauterine anoxæmia, whether intra-partum or ante-partum. An analysis of 61 such cases, in which the infants were born at the Johns Hopkins Hospital, showed that in a disproportionately high percentage of cases there had been irregular and repeated vaginal bleeding both early and late; 18 of the infants had been born prematurely—three times the usual incidence. Second stages of labour with a duration in excess of three hours were six times more frequent. The condition of the baby at birth was described as "poor" in 33 cases or over half of the group. Knowing that intrauterine anoxæmia kills such a large number of infants, we may logically assume that sublethal degrees of anoxæmia may cause irreparable injury to the cerebrum, particularly in view of the cerebral aberrations shown by adults at high altitudes with insufficient oxygen. Eastman goes on to refer to "another effect of anoxæmia", namely, retrolental fibroplasia, which causes blindness within one year in 10% to 20% of babies who weigh less than three and a half pounds at birth. He states that this anoxæmia may exist primarily because of inadequate oxygenation or be induced by exposing a premature baby to a high oxygen concentration and then withdrawing him so rapidly that acclimatization cannot take place before irreparable harm is done to neural tissue. It should be pointed out that the role of anoxæmia in the ætiology of retrolental fibroplasia is not supported by more recent work, to which we recently referred in these columns,[2] but the possibility cannot be dismissed that it is of importance at least in some cases. Eastman suggests that anoxæmia may also play a part in the production of pulmonary hyaline membrane of the newborn, a common cause of death in premature infants. Certainly, in view of the low oxygen tensions to which the fœtus is acclimatized before birth, it is understandable that high and varying pressures shortly after birth may have an injurious effect. This subject of anoxæmia or Mount Everest *in utero* needs further study.

[1] *Am. J. Obst. & Gynec.*, April, 1954.

[2] M. J. Australia, September 4, 1954.

AN HONOUR FOR Dr. MARGARET HARPER.

A recently published monograph on "Cystic Fibrosis of the Pancreas in Infants and Children" by Charles F. May, of Iowa, United States of America,[1] bears the following dedication:

> To the Practitioners:
>
> Margaret Harper, of Sydney, Australia, and Arthur H. Parmelee, of Chicago, Illinois, who recognized the salient clinical features of patients found to have cystic fibrosis of the pancreas, published the first papers indicating the frequency and importance of the disease and clearly set it apart from cœlic disease against the prevalent practice.

In his discussion of the historical aspects of this problem, May, who is the Professor of Pædiatrics in the University of Iowa, states:

> Men may differ as to which is the more significant achievement—the first description of a disease or the first report which leads to its recognition. Perhaps the first unequivocal description of the disease now commonly designated as cystic fibrosis of the pancreas was provided from England by Clarke and Hadfield in 1924.[2]
>
> Margaret Harper, of Australia, reported two patients in 1930[3] who she recognized were of the same type as described by Clarke and Hadfield. Her interest in the disease deserves special mention. That she sensed the importance of the subject is revealed by the persistence which enabled her to report a larger group of infants in 1938[4] in which the major features of the disease were indicated and the distinction from the cœliac affection was again emphasised. Between these reports, in 1935 Parmelee,[5] an American, published an account of two patients recognised to be similar to those in the above reports. . . .
>
> Somehow these adequate reports did not attract the attention of pediatricians or pathologists sufficiently to lead to widespread recognition of the nature or frequency of the disease.
>
> It is easy in retrospect to wonder at the earlier failure to recognise the features of cystic fibrosis of the pancreas which seem to separate this disease so sharply from the cœliac affection. The lesson to be learned is that differences are as important as similarities when manifestations are being assigned to disease syndromes.

Dr. Margaret Harper has long held an honoured place in Australian pædiatrics. This tribute from overseas will give pleasure to her many friends.

THE MEDICAL ANNUAL.

Of the many annual medical volumes published, none is more widely acceptable amongst practising doctors than "The Medical Annual". The seventy-second consecutive issue[6] should maintain this position. Professor R. Milnes Walker has replaced the late Professor Rendle Short as general surgical editor. Sir Henry Tidy continues as general medical editor. Forty-three contributors, representative of the best in British medicine and surgery, present succinct accounts of the past year's advances. We can still confidently advise our readers to cultivate the "Medical Annual habit".

[1] "Cystic Fibrosis of the Pancreas in Infants and Children", Charles D. May; 1954. Illinois: Charles C. Thomas, pp. 87, with illustrations and a bibliography of 82 references.

[2] *Quart. J. Med.*, 1924, 17: 358.

[3] M. J. Australia, November 15, 1930.

[4] *Arch. Dis. Childhood*, March, 1938.

[5] *Am. J. Dis. Child.*, December, 1935.

[6] "The Medical Annual: A Year Book of Treatment and Practitioners' Index", edited by Henry Tidy, K.B.E., M.A., M.D. (Oxon.), F.R.C.P., and R. Milnes Walker, M.S. (London), F.R.C.S.; seventy-second year; 1954. Bristol: John Wright and Sons, Limited. 8½" × 5½", pp. 596, with 99 illustrations.

Abstracts from Medical Literature.

MEDICINE.

Adiposity and Atherosclerosis.

W. F. CONNELL (*Canad. M. A. J.*, March, 1954) discusses adiposity and atherosclerosis. He states that atherosclerosis is due to a metabolic defect. It has to do with the metabolism, catabolism or excretion of certain lipids, especially, perhaps, cholesterol. Abnormality of the blood lipids has been observed in young and old, whether due to diabetes, xanthomatosis or other defect. Adiposity or overweight 10% to 25% above the average may be a cause. Insurance statistics in 50,000 insured persons aged twenty to sixty-four years showed a mortality considerably higher than average in those who were overweight. This was particularly the case in young people between twenty and twenty-nine years of age. Degenerative diseases of the heart, arteries and kidneys contributed most to the excess mortality. In diabetes especially, overnutrition was associated with increased mortality. War statistics in undernourished persons support the theory that over-nutrition produces atherosclerosis, especially an excess of fats. Over-eating, especially of fats, leads to atherosclerosis. Consequently, a diet of low fat, low caloric content is advised as a preventive measure, in order to diminish the incidence of atherosclerosis.

Herpes Zoster.

M. L. GELFOR (*J.A.M.A.*, March 13, 1954) describes the treatment of *herpes zoster* with cortisone. Five patients with severe acute *herpes zoster* were treated with cortisone by mouth; 200 milligrammes were given in four divided doses on the first day, then 100 milligrammes daily for seven days, and thereafter 25 milligrammes daily for four days. Dramatic relief of pain occurred in twenty-four to thirty-six hours in four out of five cases. Ophthalmic herpes cleared rapidly, and healing of the skin lesions occurred in three weeks without secondary involvement. In one case pain recurred, but was relieved by 25 milligrammes given four times daily for one week. It is suggested that cortisone should be reserved for the older age group and for those failing to respond to conventional methods. Post-herpetic neuralgia was not relieved by cortisone. The usual treatments of herpes mentioned are vaccines, analgesics, injections of procaine, X rays, vitamin B_1 and B_{12}, protamide, aureomycin and chloramphenicol. The authors state that there is no specific treatment for *herpes zoster*.

Pulmonary Tuberous Sclerosis.

J. DAWSON (*Quart. J. Med.*, April, 1954) discusses pulmonary tuberous sclerosis. He states that tuberous sclerosis, an hereditary disorder of the growth of tissues, affects many parts of the body. *Sclérose tubéreuse* affecting the brain was first recorded by Bourneville, who described epilepsy and facial and renal stigmata as well. Addison recorded a peculiar facial eruption across the nose and cheeks, consisting of shining tubercles. *Adenoma sebaceum* was another name given. Epilepsy, mental defect and *adenoma sebaceum* were grouped under the name epiloia. In 1910, 28 cases collected included examples of tumours in the heart, duodenum and thyroid. The author has surveyed 72 cases of tuberous sclerosis; 64 patients were mentally defective, 28 being males and 36 females. Only one patient had the lungs affected. Of seven patients with *adenoma sebaceum*, one was found to have pulmonary changes. Four new cases of pulmonary tuberous sclerosis are recorded; women predominated among the subjects. Onset was in adult life; progressive breathlessness, recurrent pneumothorax, hæmoptysis (rarely), diffuse miliary or cystic shadows and absence of infection were noted. Death followed about five years after the onset of symptoms, being due to asphyxia from lung destruction, spontaneous pneumothorax or heart failure. The lungs showed a profuse overgrowth of blood vessels, leading to the formation of numerous small cysts. Similar changes occurred in other organs, bones, retina, kidneys (tumours), skin and brain.

Arterial Occlusion.

R. S. GILFILLAN *et alii* (*J.A.M.A.*, April 3, 1954) discuss arterial occlusion simulating neurological disorders of the lower limbs. They state that pain in the lower extremity and hip may be due to obstruction of the superficial femoral or femoral popliteal artery. Obstruction of the terminal part of the aorta or aortic bifurcation may cause atrophy of the lower extremities including the buttocks, impotence and muscular weakness of the lower extremities. Pain occurs in all these areas on walking. Total iliac artery obstruction causes pain in the buttocks, thigh and calf. Obstruction of the *femora profunda* causes pain in the anterior and medial aspect of the thigh. Pain in the back may occur. The limbs may be pale, especially on elevation, and the pulse may not be felt. The pain ceases on cessation of muscular effort. An arteriogram may support the diagnosis. Pain or paræsthesia due to pressure on nerve roots may cause confusion, but the signs mentioned above should differentiate the two syndromes.

Urinary Tract Infection.

D. PARKER (*J.A.M.A.*, March 20, 1954) discusses the treatment of urinary tract infection. He states that structural abnormalities of the urinary tract and general factors must be considered first, but in the long run, treatment depends largely on the infecting organism. *Escherichia coli*, *Streptococcus fæcalis*, *Pseudomonas aerogenes*, *Proteus*, *Micrococcus albus* and *aureus* are the usual invaders. The author recommends "Aureomycin" for *E. coli*, or "Terramycin" or chloramphenicol, *plus* sulphisoxazole ("Gantrisin"); and the same antibiotics, or streptomycin or penicillin, for the other common invaders. Thus "Aureomycin", "Terramycin", chloramphenicol, streptomycin and penicillin are the principal antibiotics used. The author does not deal with the sulphonamides, which have still a wide range of usefulness.

Pneumonia.

W. WEISS *et alii* (*J.A.M.A.*, April 3, 1954) discuss antibiotic combinations in the treatment of pneumococcal pneumonia. Two hundred and eighty-three patients were treated. Most of the patients responded to procaine penicillin, 300,000 units twice daily. Thereafter a combination of chlortetracycline, oxytetracycline and chloramphenicol was used in doses equal to one-third of the usual dose of each. The result of treatment with this combination was as good as that with penicillin. Complications occurred about equally. No significant toxic effects were noted in either group. Failure to cure was observed in 24% of patients who were found to have tuberculosis. X-ray examinations of the chest were made weekly and were important in the diagnosis and assessment of response to treatment. Penicillin was the most satisfactory form of treatment.

Syncope.

A. SOFFER (*J.A.M.A.*, April 3, 1954) discusses the therapy of syncope. He derides abdominal binders, the head-between-the-knees position and sympathomimetic drugs. He attributes syncope to an accumulation of blood in the legs. He states that in syncope there is a fall in blood pressure caused by widespread vasodilation in muscle. Vasoconstriction occurs in the skin and gastro-intestinal tract. Pooling of blood occurs in the legs if the patient is standing, and there is a critical reduction of cerebral or coronary blood flow. The treatment of syncope is mainly the adoption of the supine position with the head and trunk tilted downwards and the legs raised. The head-between-the-knees position is a very poor substitute. Autonomic drugs may cause hypotension and syncope. Leg bindings, right up to the hip, are often effective. It seems that the use of drugs to reduce blood pressure may necessitate frequent use of leg bindings.

Definition of Coronary Insufficiency.

D. SCHERF AND M. GOLBEY (*Am. Heart J.*, June, 1954) state that the term "coronary insufficiency", when originally introduced, was meant to describe a certain functional state in which the coronary blood flow was not adequate for the needs of the heart, a state which might occur in a variety of morbid conditions. They cite examples from medical literature to show that the term has become much abused, that it is sometimes used wrongly as a synonym for *angina pectoris*, to indicate coronary arterial disease or to designate the condition of necrosis or infarction of the heart muscle without complete coronary occlusion. There appears to be confusion as to the meaning and correct use of the term. The authors propose that it should be used only in its original sense and only with a qualifying description indicating the nature of the morbid process producing the insufficiency.

The Pathogenesis of Bronchiectasis.

O. C. CROXATTO AND A. LANARI (*J. Thoracic Surg.*, May, 1954) review the literature relating to the pathogenesis of bronchiectasis and describe the results of experimental bronchial obstruction in dogs and the study of specimens of human bronchiectasis. They conclude that complete bronchial obstruction leads to broncho-alveolar deflation. The secreted mucus, not finding an external outlet, dilates the bronchus. They believe that bronchodilation with mucus constitutes the first phase of every obstructive bronchiectasis. The bronchodilations may, once the bronchus becomes recanalized, disappear or later become permanent (bronchiectasis) as a result

of the bronchiolar obstruction or as a consequence of an accompanying infection. The authors think it probable that all bronchiectasis, congenital or acquired, primary or secondary, is caused by a bronchial obstruction.

Pretibial Myxœdema and Malignant Exophthalmos.

WILLIAM H. BEIERWALTES (*Ann. Int. Med.*, May, 1954) found pretibial myxœdema in seven of 28 patients with severe exophthalmos. No reason could be found for the occurrence of the skin lesions in these cases. There was no response to treatment with thyroid; indeed, the skin lesions sometimes progressed.

Electrocardiographic Effects of Veratrum Viride.

B. ZUMOFF (*Am. Heart J.*, April, 1954) reports the case of a healthy young recruit who was rejected for air crew because his blood pressure was a little higher than normal (144 millimetres of mercury, systolic, and 88 millimetres, diastolic). His doctor gave him tablets containing *veratrum viride*, and shortly afterwards at another medical examination his blood pressure was normal. However, an electrocardiogram showed an intermittent wandering of the pacemaker downwards from the sinus node to a focus in the right bundle of His, producing a tracing like that seen in bundle-branch block. From this and from the fall in blood pressure it was suspected that he had taken a vagomimetic drug.

Blood Vessels in Diabetes.

JÖRN DITZEL AND UFFE SAGILD (*New England J. Med.*, April, 1954) review the literature on the lesions which occur in small blood vessels in diabetes and record their own observations of conjunctival vessels. Characteristic changes are found in the capillaries and venules and are probably widespread through most of the tissues of the body.

"Diamox."

A. LEAF, W. B. SCHWARTZ AND A. S. RELMAN (*New England J. Med.*, 1954, 250: 759) report the changes in electrolyte and acid-base balance in five patients with congestive heart failure and one normal subject in whom balance studies were carried out after the administration of "Diamox", a carbonic anhydrase inhibitor. In two subjects with congestive heart failure and in the normal subject the responses were similar to those previously observed after administration of sulphanilamide. These effects included excretion of an alkaline urine containing increased quantities of sodium and potassium, and the development of hyperchlorœmic acidosis. Three other subjects lost no sodium and responded to the drug only with reduction in urine acidity and increased excretion of potassium. In no case did significant hypokalæmia or clinical signs of potassium deficiency appear. None of the patients studied excreted sufficient chloride during treatment to prevent the prompt development of hyperchlorœmic acidosis and drug resistance. Intervals of six to forty-eight hours between single doses were insufficient to allow regeneration of serum bicarbonate through the renal excretion of an acid urine. Despite the loss of diuretic action during continued administration of the drug, the data suggest that the drug maintained an inhibitory effect on renal acidifying mechanisms.

A. S. RELMAN, A. LEAF AND W. B. SCHWARTZ (*Ibidem*, 1954, 250: 800) have studied the clinical value of "Diamox" given orally as a diuretic to patients with severe congestive heart failure. Of 26 patients in hospital half the group failed to lose weight and the remainder, with one exception, lost only two to six pounds over an average period of seven days. One patient lost eleven pounds in nine days and became œdema-free. Administration of the drug once daily in doses of 0·25 to 3·0 grammes had approximately the same diuretic effect as more frequent dosage, and did not appear to prevent the usual development of mild acidosis and resistance to further therapy. The least favourable response was observed in patients with nitrogen retention. Many patients who had lost little or no weight with "Diamox" subsequently responded satisfactorily to combined therapy with mercurial diuretics, aminophylline and ammonium chloride. "Diamox" administered orally to patients in hospital with severe congestive heart failure was of little or no clinical value as a diuretic. The authors state that the meagre results obtained in this group of patients contrast sharply with the effects in patients with heart failure due to chronic *cor pulmonale*, which will be reported later.

Renal Hypertension.

A. J. SCHAFFER AND M. MARKOWITZ (*Am. J. Med. Sc.*, 1954, 227: 417) report four additional cases of hypertension cured by unilateral nephrectomy and review the results together with those relating to 26 children and 97 adults reported in the literature. It appears that more than one-third of the patients of all ages with unilateral kidney disease will be rendered normotensive by nephrectomy. More than one-third will be unimproved, the rest greatly improved. Children appear to respond to nephrectomy more favourably than do adults. Only two of thirty mentioned in the literature have failed to respond with marked reduction of blood pressure and striking clinical improvement. Advanced age and long duration of symptoms or of known hypertension are not absolute concrete indications for operation. In the opinion of the authors, infection of the presumably good kidney and loss of function of that kidney of more than minimal grade are the only valid contraindications to nephrectomy.

Chlorpromazine and Chronic Alcoholics.

J. F. CUMMINS AND D. G. FRIEND (*Am. J. M. Sc.*, 1954, 227: 561) report the use of chlorpromazine and disulfiram for the control of the withdrawal symptoms in the treatment of chronic alcoholics. This combination has been used for 60 patients with acute or chronic alcoholism. The regimen consisted of 100 milligrammes of chlorpromazine and 500 milligrammes of disulfiram given by mouth. Within six hours administration of chlorpromazine 50 milligrammes was repeated. Twenty-four hours later 500 milligrammes of disulfiram and 50 milligrammes of chlorpromazine were administered. Forty-eight hours after the initial therapy, 500 milligrammes of disulfiram and 25 milligrammes of chlorpromazine were given. Thereafter for one week, 500 milligrammes of disulfiram were administered daily and the dosage was then adjusted to the patient's tolerance. In the initial therapy intramuscular injection of chlorpromazine was given when required. It is concluded that this combination of drugs administered together in adequate dosage to the inebriated alcoholic produces a tranquillized state more effectively than with any current method of sedation. No untoward side effects have been noted, and nausea, vomiting and hypertensive episodes did not occur. The usual post-alcoholic psychomotor agitation accompanying withdrawal of alcohol was likewise abolished. Patients in several instances were able to return to work within seventy-two hours without having experienced the jitters, tremulousness or butterfly sensation so common during the withdrawal stages. Neither chlorpromazine nor disulfiram when given alone proved so satisfactory as the combination in treatment.

Quinidine in Treatment of Auricular Fibrillation.

O. BEDARD (*Am. J. M. Sc.*, 1954, 227: 530) reports on quinidine given to 67 patients with auricular fibrillation in a dosage of up to six grammes daily. Of patients with arteriosclerotic heart disease, 90% reverted to normal rhythm. Of those with rheumatic heart disease, 86% reverted to normal rhythm, and of those with hypertensive heart disease, all of seven patients studied reverted. The mean dose necessary for reversion for the first two groups was of the order of 2·6 grammes a day. Of the patients with rheumatic heart disease 22% relapsed after conversion to sinus rhythm, and seven patients of the total died during treatment. In six cases the treatment was stopped because of complications or side effects. The results indicate that previous heart failure should not exclude the use of quinidine, but the presence of serious conduction defects is considered a contraindication of quinidine therapy.

Intracardiac Knotting of the Catheter in Heart Catheterization.

L. JOHANSSON *et alii* (*J. Thoracic Surg.*, June, 1954) state that knotting of the catheter inside the heart occurred three times in the course of 221 cardiac catheterizations at their hospital. In each case it occurred in a patient with constrictive pericarditis, in which disease fluoroscopy of the catheter is relatively difficult. Twice it occurred in the same patient. In each case when it became apparent that the knot could not be undone by manipulation of the catheter and when the maximum period of fluoroscopy was approached, the knot was tightened to make it as small as possible, and the catheter was then cautiously withdrawn from the heart under continuous fluoroscopic and electrocardiographic control. In one case no difficulty was experienced in withdrawing the knotted catheter through the median cubital vein. In another case the knot stuck at the level of the axilla; general anæsthesia was then induced, spasm was relaxed, and the knot came out easily through the median cubital vein. In the third case attempts to undo the knot caused two more to form; the same technique was followed, but here the final portion of the basilic vein came away with the catheter as it was pulled out and had to be excised. The patients suffered no after effects, and none of the catheterized vessels became thrombosed.

Special Articles for the Clinician.

(CONTRIBUTED BY REQUEST.)

CIX.

OINTMENT AND EMULSION CREAM BASES.

OINTMENTS have such a diversity of use that there can be no such thing as an ideal all-purpose base; and while it has been claimed, with some justification, that the base may be more efficient in therapy than the supposed active constituents themselves, the converse is certainly true that an unsatisfactory base can destroy completely the efficiency of the constituents.

To summarize the many applications of these bases: they may be simple emollients; a means of adding water and fat to a harsh dry skin; carriers of sedatives, astringents, antipruritics, anodynes *et cetera*; conveyers of antiseptics or antibiotics to a local lesion; or even vehicles for carrying drugs into the system via the skin. On the other hand, their function may be purely protective—either against body secretions or excretions, as in biliary, pancreatic and other fistulæ, in the various "ostomies", or for the protection of the surrounding skin when some caustic medicament is to be locally applied. In the field of industry they acquire some importance in protecting the skin from nocuous dusts and chemicals, as so-called barrier creams. This term, incidentally, is grossly overworked and misapplied, there being no single preparation or type of cream having universal application as a barrier.

If adequate protection is required, it is essential that the ointment make intimate contact with the skin. This presents difficulties in that both water and fat exude from the skin in sweat and sebum, and for intimacy of contact the ointment must be able to absorb both and overcome the interfacial tensions separating these two immiscibles.

It is also desirable, for the purpose of protection, that the base itself be inert. From this standpoint the paraffins—soft paraffin or suitable mixtures of hard, soft and liquid paraffins to give a preparation of suitable consistency and hardness—would at once suggest themselves, as they are quite impervious to digestive or other secretions, to acids and alkalis, and to most industrial chemicals.

On the other hand, while they are miscible with the skin fat, a film of underlying sweat or of watery exudation from the broken skin effectively bars complete contact. In fact, where there is an infective and exudative dermatitis, paraffins, even if they carry an antiseptic, will deliver this indifferently or not at all, and may even spread infection.

In the words of a very old but critical observer—one William Shakespeare:

> It will but skin and film the ulcerous place
> Whiles rank corruption mining all within
> Infects unseen.

This immiscibility can be overcome in several ways. Perhaps the easiest is to add about 10% of wool fat or lanolin, which, in addition to its capacity to absorb a limited quantity of water, is stable, chemically inert, readily sterilizable and not subject to rancidity.

Simple Ointment (*Unguentum Simplex*) (B.P., 1953) satisfies this requirement:

Wool Fat	5
Hard Paraffin	5
Cetostearyl Alcohol	*5*
Soft White Paraffin	to 100

The less familiar Cetostearyl Alcohol is finding more frequent application in ointment bases. It is a mixture of saturated fatty alcohols, waxy in consistency and, like Wool Fat, having a limited capacity to absorb water and hold it in a water-in-oil emulsion.

The greater intimacy of contact afforded by this base is further increased by the incorporation of inert but adsorbent powders—such as Light Kaolin, Titanium Dioxide, Starch or Zinc Oxide. The addition of 15% to 20% of such powders makes a fairly stiff but adherent paste and may be prescribed thus:

Titanium Dioxide	15
Light Kaolin	10
Simple Ointment (B.P., 1953)	to 100
Send 500 grains.	

(In parenthesis we are on a crusade at present to induce prescribers to order either in grammes, 30 grammes being equivalent to an ounce, or in multiples of 100 grains, 500 grains approximating the apothecary's ounce (480 grains), and 400 grains approximating the avoirdupois ounce (437·5 grains). Such a practice facilitates accuracy of calculation and application of percentage quantities.)

In place of the adsorbent powders, some have advocated the incorporation of Aluminium Powder (British Pharmaceutical Codex), which consists of Metallic Aluminium in very fine flakes with an appreciable proportion of Aluminium Oxide. This may be added to Simple Ointment (about 20%) or has been used by itself as a dusting powder applied to ulcers or to the skin around "ostomy" operations. The British Pharmaceutical Codex (Supplement, 1952) contains a formula for Compound Paste of Aluminium:

Aluminium Powder (B.P.C.)	100
Zinc Oxide	200
Liquid Paraffin	200

These preparations are easily sterilized by heating in an oven to 150° for an hour, but, of course, must be stirred till cool to prevent separation of the ingredients.

A very simple and practical method is to use a flat cigarette tin of 20 or 50 capacity, cut a quantity of gauze just to fit the tin, "butter" the gauze in layers of three or four pieces with the ointment, fit in the tin and sterilize in an oven with suitable precautions.

This gives a home-made protective dressing of the *tulle gras* type, which may be prepared by instruction in any pharmacy. Any intelligent patient may be entrusted to prepare his own.

Incidentally the relative dryness of this ointment, which will be increased by adding more adsorbent powder up to 25%, makes it suitable for application where folds of skin induce moistness and maceration—submammary and intergluteal regions.

If required, active ingredients may be added—for example, Tannic Acid (5%) as an astringent; Butyl Aminobenzoate (1% or 2%) for pruritus or pain; Benzoic Acid (5% or 10%), Undecylenic Acid (10% or 12%) or Phenyl Mercuric Nitrate (0·1%) for fungoid infestations. Lassar's Paste is of this class:

Zinc Oxide	24
Starch	24
Salicylic Acid	2
Soft White Paraffin	50

This type of unguent is not a good deliverer of medicaments. It must be regarded mainly as protective to the skin and, because of its adherent properties and its inertia, a good barrier against nocuous dusts and chemicals.

Of more general application, especially for the delivery of medicaments, are the emulsion bases. Of these there are two types, the water-in-oil or oil-miscible bases and the oil-in-water or water-miscible bases.

The oil-miscible bases may be dealt with first. These are creams or emulsions in which water is emulsified in oil, the oil constituting the continuous or external phase. We are quite familiar with these (though perhaps not thinking of them as water-in-oil emulsions) in the well-known forms of Carron Oil, Zinc Cream and the ordinary toilet cold cream.

The bases of Carron Oil and Zinc Cream are similar, consisting of a fixed oil shaken up with an approximately equal quantity of lime-water. The Calcium Hydroxide in the lime-water (about half a grain to the fluid ounce) unites with the oil to form a small quantity of Calcium Soap, which, remaining in solution in the oil, emulsifies the water within the oil.

To ensure the stability of the emulsion and to reinforce the emulgent properties of the Calcium Soap, wool fat is usually added.

A suitable base of this type is *Cremor Simplex Oleosus* (Simple Water-in-Oil Cream) of the forthcoming Australian Pharmaceutical Formulary:

Oleic Acid	4 grains
Arachis Oil	186 grains
Wool Fat	*120 grains*
Solution of Calcium Hydroxide	209 minims

Two points should be noted with this and other Australian Pharmaceutical Formulary formulæ. First, a convention is established for the guidance of prescribers that the title "Cremor—Oleosus" indicates a water-in-oil (w/o) emulsion base, while "Cremor—Aquosus" indicates an oil-in-water

(o/w) base. Second, in conformity with present views, the quantities of ingredients cited in the formulæ add to 500 grains, the conventionalized "ounce".

The feebly emulgent properties of the wool fat reside mainly in the unsaponifiable residue. This comprises many alcohols, prominent among which is cholesterol, and it is adopted in the British Pharmacopœia with the title Wool Alcohols (*Alcoholia Lanæ*). The incorporation of 6% of this in a mixture of paraffins constitutes the Pharmacopœial Ointment of Wool Alcohols (*Unguentum Alcoholium Lanæ*). This is an anhydrous but hydrophilic ointment, comparable in many respects and interchangeable with the Simple Ointment (B.P.) already referred to. It is, however, a potential water-in-oil cream, and mixed with an equal quantity of water forms the hydrous ointment (*Unguentum Aquosum*) of the British Pharmacopœia.

Under Australian conditions this is not quite stable, and a useful modification is the oil-miscible cholesterol cream (*Cremor Cholesterol Oleosus*) of the Australian Pharmaceutical Formulary under revision:

Ointment of Wool Alcohols (B.P.)	160 grains
Arachis Oil	160 grains
Distilled Water	195 minims

Occasionally both the wool alcohols and the calcium soap emulgent are used together as in the liquid water-in-oil cream, *Lotio Calamine Oleosa* (A.P.F.):

Calamine	180 grains
Zinc Oxide	80 grains
Oleic Acid	20 minims
Wool Alcohols	20 grains
Solution of Calcium Hydroxide	1½ fluid ounces
Arachis Oil	4 fluid ounces

A third water-in-oil emulsion base is the ordinary "cold cream", now used mainly as an emollient and cleansing cream for toilet purposes. It is a water-in-oil base made by shaking together melted beeswax, oil and an aqueous solution of borax. Though not used frequently now in medicine, it is not devoid of value as an emollient and cooling cream.

For practical purposes the Simple Cream and the Cholesterol Cream are the most stable and trouble-free water-in-oil bases for general use. Their virtues may be summarized thus. They mix with and absorb both sweat and sebum, do not dehydrate or defat the skin; that is, they are compatible with the skin and are emollient and protective. The external phase being oily, they will give fair delivery of oil-soluble drugs to the skin, but poor delivery of water-soluble drugs. They are non-ionic and have few incompatibles. They will carry adsorbent powders readily (for example, Zinc Oxide, Titanium Dioxide, Light Kaolin, Calamine, Bismuth Salts), and as they do not wash off the skin easily, especially when charged with these powders, they form an excellent barrier to many chemical irritants. A wide experience as medical officer at the Boy Scouts' Jamboree some years ago convinced me that the most efficient barrier against sunburn is freshly made Zinc Cream, while for local treatment after sunburn the same cream, reinforced if needed by an analgesic (say, 0·5% to 1% Butyl Aminobenzoate), is quite effective.

For the treatment of previous "over-treatment", as emollients in xeroderma and in most non-infective dermatoses, the simple water-in-oil creams have a very definite place.

For pruritus, the incorporation of such drugs as Menthol (0·5% to 1%), Chlorbutol (5% to 10%), Camphor (5% to 10%) and Methyl Salicylate (5% to 10%) frequently suffices in simple water-in-oil creams, Zinc Cream and Calamine cream. For less responsive cases or where analgesia is required, the oil-soluble local anæsthetics, Benzocaine (5% to 10%) and Butyl Aminobenzoate (0·5% to 2%), may be used.

The following are examples of prescriptions having water-in-oil cream bases:

Menthol	0·5%
Zinc Oxide	10%
Butyl Aminobenzoate	1%
Simple Water-in-Oil Cream (A.P.F.) ..	to 500 grains

(This is antipruritic, sedative, astringent and analgesic.)

As a slightly hygroscopic but emollient cream for continuous application in xeroderma, Glycerin may be added thus:

Glycerin	20%
Simple Water-in-Oil Cream (A.P.F.) ..	to 500 grains

Oil of Orange Flowers (six minims) or Oil of Lavender (ten minims) may be added to minimize the fatty odour.

The second group of emulsion bases is the water-miscible or oil-in-water group. In these the external or continuous phase is water, the oil (disperse phase) being emulsified or dispersed throughout the water.

These differ in many respects from the oil-miscible creams. They are in themselves such active emulsifying agents, and make such close contact with the skin and the floor of ulcers, that they practically incorporate these within themselves. With these characters they are excellent media for conveying water-soluble drugs to the skin or to ulcerated areas. In fact, because of their efficient delivery, it is often necessary to reduce the quantities of active constituents that sufficed when incorporated in the inert or non-emulsified bases.

Their emulgent activity is such that they readily incorporate skin debris (secretions, pus and bacteria), and their easy water-miscibility allows them to be washed off with warm or even cold running water without rubbing, damage being thus avoided to epithelial buds or granulations in healing ulcers. In being washed from the skin they carry with them the emulsified debris and thus act usefully as detergents.

The emulgents that have been elaborated and used for these water-miscible creams are many and complex, but we will consider only such types as will allow of a rational and informed application to satisfy therapeutic requirements.

The ordinary water-soluble household soaps could be used, but in aqueous solution they are highly ionized, strongly alkaline, damaging to the skin and fraught with many potential incompatibles.

The first emulgent in common use is really a complex soap comparable with the ordinary household detergent soaps of the sodium oleate class, but the kation or metallic radical equivalent is Triethanolamine. This substance, a hygroscopic liquid readily soluble in both water and alcohol, forms with Oleic or Stearic Acid a soap with strongly emulgent properties. A convenient formula employing this is *Cremor Triethanolamine Aquosus* (Hydrous Triethanolamine Cream) (A.P.F.):

Stearic Acid	20
Wool Fat	4
Triethanolamine	2
Glycerin	5
Distilled Water	to 100

Triethanolamine is, however, more frequently used in lotions or liquid creams and is usually prescribed in strengths of 1% to 4% with about three or four times the quantity of Oleic or Stearic Acid. The larger quantity of Stearic Acid and the added Wool Fat in the above formula give body to the cream. A commonly used liquid preparation of this type is application of Benzyl Benzoate (A.P.F.):

Benzyl Benzoate	1 fluid ounce.
Triethanolamine	12 minims
Stearic Acid	40 grains
Distilled Water	to 4 fluid ounces

In this emulsified form the effectiveness of Benzyl Benzoate in scabies is enhanced not only by its greater intimacy of contact and penetration, but by its greater covering capacity. If desired, Dicophane (D.D.T.) (2%) might be dissolved in the Benzyl Benzoate and incorporated, thus increasing its efficiency in relation to parasitic infestations in general. A comparable formula having similar therapeutic application and carrying the effective but relatively non-toxic Gamma Benzene Hexachloride is Cream of Gamma Benzene Hexachloride (G.B.H. Cream) (A.P.F.):

Gamma Benzene Hexachloride	5 grains
Stearic Acid	10 grains
Cetostearyl Alcohol	100 grains
Triethanolamine	8 grains
Glycerin	40 grains
Distilled Water	to 500 grains

A useful mildly detergent emollient hand lotion with a Triethanolamine Stearate base is the compound almond lotion of the Australian Pharmaceutical Formulary (*Lotio Amygdalæ Composita*).

The second type of emulgent for the preparation of oil-in-water creams is the Emulsifying Wax of the British Pharmacopœia. This is a waxy solid consisting of Sodium Lauryl Sulphate (10%) incorporated in Cetostearyl Alcohol. The actual emulgent (Sodium Lauryl Sulphate) is a water-

soluble slightly alkaline powder, the Cetostearyl Alcohol being merely a diluent, but also functioning as a "filler"—that is, a substance giving body to the cream.

The British Pharmacopœia has two preparations involving this substance. The first is "Emulsifying Ointment"—an anhydrous but hydrophilic base containing 30% of emulsifying wax in a mixture of soft and liquid paraffins. The second, called "Simple Cream" or "Hydrous Emulsifying Ointment", contains 30% of the Emulsifying Ointment, with 0·1% of Chlorocresol as a preservative and water to 100.

A comparable preparation of the Australian Pharmaceutical Formulary designed to stand up more readily to Australian conditions is *Cremor Cereæ Sulphonatæ* (A.P.F.) (Hydrous Cream of Emulsifying Wax):

Emulsifying Wax	50 grains
Hard Paraffin	25 grains
Liquid Paraffin	140 minims
Chlorocresol	¼ grain
Distilled Water	312 minims

Both of these emulgents are of the nature of water-soluble salts or electrolytes, and as such are subject to ionization in aqueous solution. This brings in its train potentialities for incompatibility.

It will be recalled that when a salt dissolves in water it is to a greater or less extent dissociated into ions—a positively charged metallic ion or kation and a negatively charged non-metallic radical or anion. In the two emulgents considered (Triethanolamine Oleate and Sodium Lauryl Sulphate) the emulgent properties lie mainly in the anion. These are therefore known as Anionic Emulgents.

Other ionic emulgents—notably the quaternary ammonium group of which Cetrimide and "Zephiran" are examples—carry their emulgent properties in the positively charged ion and are known as Kationic Emulgents.

A mixture of two electrolytes in aqueous solution inevitably leads to an exchange of radicals, so that on purely theoretical grounds, non-electrolytes or non-ionizable drugs should be used with the above emulgents if the possibility of incompatibility is to be avoided—such drugs would include Phenol, Resorcinol and Tars *et cetera*.

However, for the most part the question of incompatibility is negligible, as the degree of ionization in the emulgents is very small, but, just as the emulgents are classified as kationic or anionic, the same classification may be extended to various drugs in common use, depending on whether their therapeutic activities lie in the kationic or in the anionic radicals.

As mixtures of large active ions of opposite charge are liable to cause precipitation and/or inactivation of the medicament, it follows that anionic drugs should not be prescribed with kationic drugs, nor should they be incorporated in creams having a Kationic Emulgent. The converse is, of course, also true.

While frequently the therapeutic loss following such theoretical incompatibility is negligible, the principle involved in avoiding such potentialities for incompatibility is a sound one.

Kationic drugs comprise, for the most part, hydrochlorides, sulphates and other salts of organic bases; for example, Alkaloids (Sulphates of Atropine or Morphine), some Antibiotics (Hydrochlorides of "Aureomycin", Streptomycin and "Terramycin"), adrenergic drugs (hydrochlorides and other salts of Adrenaline, Ephedrine, Amphetamine and Isoprenaline), basic antiseptic dyes (Crystal Violet, Brilliant Green, Aminacrine Hydrochloride), many local anæsthetics (Hydrochlorides of Procaine, Cocaine, Amethocaine, Cinchocaine), most antihistamines (Promezathine Hydrochloride, Mepyramine Maleate) and Quaternary Ammonium Germicides (Cetrimide, "Zephiran").

Anionic drugs comprise, for the most part, the organic acids and metallic or metalloid derivatives of acidic organic compounds—for example, soaps (Sodium Oleate, Triethanolamine Oleate), Soluble Barbiturates, Soluble Sulphonamides, Acid Dyes (Fluorescin Sodium) and Penicillins (Sodium Potassium or Calcium Salts of Penicillin).

Should it be desired to include any members of this group in a cream, the Hydrous Cream of Emulsifying Wax would be satisfactory. Where (as in the case of Penicillin) stability of the therapeutic agent is endangered by prolonged solution in water, the anhydrous but hydrophilic base, Emulsifying Ointment B.P. would offer a way out of the difficulty. This will hold and preserve the Penicillin, but because of its potential water miscibility will make it available to skin or ulcer.

The question of ionic incompatibility does not arise in the case of the water-in-oil emulgents, in that these are, for the most part, non-ionic; but even if they are electrolytes, they remain in solution in the oil and so are not subject to ionic dissociation.

Though I have perhaps unnecessarily introduced this ionic complication, it was done with intent in that it is salutary to consider these very complex drugs of the present time as non-ionic, kationic or anionic to avoid the risks of physical and/or therapeutic incompatibility.

In the case of creams this complication need not now arise unless two ionically opposed drugs, such as Sulphacetamide Sodium and Proflavine Hemisulphate, are prescribed together in a cream, for several non-ionic emulgents have been developed, and it is probable that the next British Pharmacopœia will adopt one of these—to wit, "Cetomacrogol 1000", a polyoxyethylene-glycol-1000-monocetyl ether. This interesting chemical carries a hydrophobic cetyl group slightly overbalanced with hydrophilic oxyethylene groups and with the glycol residue. It is a neutral waxy substance soluble in water, not ionically dissociated, not affected by a high concentration of electrolytes and stable over a wide pH range.

Just as for convenience in pharmaceutical use the British Pharmacopœia mixes Sodium Lauryl Sulphate with Cetostearyl Alcohol to make Emulsifying Wax, so also we will have the comparable anhydrous but hydrophilic base Non-Ionic Emulsifying Wax:

Cetomacrogol 1000	20
Cetostearyl Alcohol	80

and the corresponding hydrous cream Non-Ionic Cream:

Non-Ionic Emulsifying Wax	14
Liquid Paraffin	8
Chlorocresol	0·1
Distilled Water	to 100

As this is compatible with either anionic or kationic drugs (but not together), it is a safe base and will probably establish itself as the base of choice for most oil-in-water creams.

The pharmacist has had a comprehensive training in the matter of anionic and kationic incompatibility, and when in doubt we may perhaps leave the choice of the most suitable base in his hands by prescribing thus:

Sulphacetamide	10%
Aminacrine Hydrochloride	0·2%
Oil-in-Water Cream Base	to 200 grains

or

Salicylic Acid	5 grains
Precipitated Sulphur	20 grains
Water-in-Oil Emulsion Base	to 500 grains

We have referred to a kationic group of emulgents which, as they have independent therapeutic application, merit individual consideration. These are the quaternary ammonium compounds represented by Cetrimide (B.P.) and Benzalkonium Chloride (U.S.P.), better known by its trade name of "Zephiran".

These have the basic structure of ammonium chloride, but for the hydrogen atoms of the ammonium radical are substituted various organic groups. These substances froth considerably in aqueous solution, and because of their great reduction of surface tension are active wetting agents and have high penetrative power. Apart from any specific toxicity they may have, these characters make them potent bactericides because, by disturbing the surface equilibria of bacteria, they interfere with their nutrition and with their reproductive capacity. In addition to this they are powerful detergents and emulgents, characters which enhance their utility in the mechanical removal of infection.

As their therapeutically and pharmaceutically useful properties reside in the complex positively charged kation, they are grouped with the kationic detergents, and are sometimes called soapless soaps or reverse soaps. This last term arises from the fact that in household soaps the detergent properties lie in the anion, so that the kationic detergents are incompatible with ordinary domestic soap; yet how often does one see the surgeon rinse his still soapy hands with "Zephiran".

Most frequently these quarternary ammonium detergents are used in simple aqueous or alcohol-acetone solutions (Cetrimide 0·5% to 1%, Benzalkonium Chloride 0·05% to 0·1%) for pre-operative skin preparations, for cleansing and disinfecting wounds, for the clearing of various forms of pyoderma (acne, folliculitis, impetigo, furunculosis *et*

cetera). Because of their highly emulgent characters the skin is rapidly defatted and may become excessively dry. This may be overcome by combining the emulgent with some fatty substance in the form of an oil-in-water cream.

Apart from dermatological application, such creams have found much use in gynæcological and obstetric practice—mainly as bactericidal glove and instrument lubricants. For this a useful formula is *Cremor Cetrimide Aquosus* (A.P.F.) (*Hydrous Cetrimide Cream*):

Cetrimide	3 grains
Cetostearyl Alcohol	50 grains
Liquid Paraffin	50 grains
Distilled Water	to 500 grains

Though these emulsion cream bases have had so much limelight within recent times, it is worthy of note that, with the Pharmacopœial adoption of Bentonite, a colloidal hydrated aluminium silicate which swells in water to a homogeneous sol, the thickened aqueous base has found more frequent use.

This is now an ingredient in the official Calamine Lotion, and the following Paste of Titanium Dioxide is a comparable aqueous paste of use in exudative dermatoses:

Titanium Dioxide	20
Zinc Oxide	20
Light Kaolin	10
Precipitated Ferric Oxide	2
Chlorocresol	0·1
Bentonite Magma (5%)	to 100

BYRON STANTON,
Melbourne.

British Medical Association News.

ANNUAL MEETING.

THE annual meeting of the Queensland Branch of the British Medical Association was held at British Medical Association House, 225 Wickham Terrace, Brisbane, on Saturday, August 21, 1954, at 10.30 a.m., DR. W. J. SAXTON, the President, in the chair.

MINUTES OF PREVIOUS ANNUAL MEETING.

The minutes of the previous annual meeting, held on August 22, 1953, parts one and two, were read and confirmed.

ANNUAL REPORT OF COUNCIL.

The annual report of the Council for the year ended June 30, 1954, copies of which had been circulated to members of the Branch, was taken as read, and was received and adopted on the motion of Dr. J. G. Wagner, seconded by Dr. Charles Roe. The report is as follows:

The Council has pleasure in presenting the sixtieth annual report of the work of the Branch for the year ending June 30, 1954.

Membership.

The membership of the Branch is 1076, *plus* 8 honorary life members, as against 1035 and 7 honorary life members in 1953, making a total gain of 42. There are also 110 honorary associate members, 31 of whom were elected this year. Thirty-one honorary associate members were elected to full membership on graduation.

The gains were: new members, 63; transfers from other Branches, 36; members reinstated, 5. The losses were: members transferred to other Branches, 40; struck off, 17; deceased, 5.

The following, by virtue of their fifty years' membership of the British Medical Association, have become honorary life members: Dr. Eleanor Bourne, Dr. A. B. Carvosso, Dr. H. R. Cope, Dr. J. A. Goldsmid, Dr. B. L. Hart, Dr. W. Wallis Hoare, Dr. T. A. Price (also Honorary Vice-President of the Branch), Dr. Woodburn Stevens.

Obituary.

We regret to record the deaths of the following members: Dr. H. S. McLelland, Brisbane; Dr. A. H. Marks, Brisbane; Dr. T. M. Hall, Toowoomba; Dr. A. T. Pitt, Brisbane; Dr. H. K. Denham, Brisbane.

In the death of Dr. Alexander Hammett Marks, which occurred on January 18 last, the profession lost one of its colourful and distinguished members. Dr. Marks had been a Councillor for a number of years and was also a Past-President of the Branch. He was President of the Medical Defence Society of Queensland from 1931 to 1946, and was also President of the Australasian Trained Nurses' Association, Queensland Branch. In addition, Dr. Marks had a distinguished record of military service.

It is with regret that we record the death of Dr. Hugh Sylvester McLelland, which took place on August 28, 1953. Dr. McLelland was a member of the Council of the Branch and served on various Branch committees. He was lecturer in Gynæcology and Obstetrics at the University of Queensland from 1939 to 1948, and was an active member of the staff of the Brisbane General Hospital for twenty-five years.

Meetings.

In addition to the annual meeting, nine general meetings of the Branch were held, including two clinical meetings. The average attendance at the general meetings was 48.

Council.

Nineteen meetings of the Council were held, one being a special meeting. Record of attendance is as follows:

Dr. W. J. Saxton (President)	19
Dr. H. S. Patterson (President-Elect)	16
Dr. T. V. Stubbs Brown (Past-President)	14
Dr. D. A. Henderson (Honorary Secretary)	16
Dr. J. G. Wagner (Honorary Treasurer)	17
Dr. H. W. Horn (Chairman of Council, Federal Council Representative)	18
Dr. A. D. A. Mayes (Chairman of Subcommittees, Councillor)[1]	14
Dr. A. F. McSweeny (Secretary of Subcommittees, Councillor)	16
Dr. B. N. Adsett (Councillor)	13
Dr. B. L. W. Clarke (Councillor)	12
Dr. G. V. Hickey, senior (Councillor)	13
Dr. D. C. Jackson (Councillor)	15
Dr. A. E. Lee (Councillor)[2]	16
Dr. H. R. Love (Councillor)	8
Dr. T. R. Neville (Councillor)[3]	9
Dr. Charles Roe (Councillor)[4]	16
Dr. R. B. Salter (Councillor)	15
Dr. W. H. Steel (Councillor)	14

Scientific Meetings.

July: Dr. A. R. Murray, "Vertebral Disk Diseases".

August: Dr. A. J. Collins, Sydney, "Some Aspects of Modern Drug Therapy" (Bancroft Oration).

October: Dr. G. V. Hickey, senior, "Hospitals—Retrospect and Prospect" (Jackson Lecture).

November: Clinical meeting in conjunction with the Mater Misericordiæ Hospital Clinical Society.

February: Clinical meeting in conjunction with the Brisbane General Hospital Clinical Society.

March: Dr. R. B. Salter and Dr. L. D. Walters, "Toxæmias of Pregnancy".

April: Dr. John Woodley, "Modern Anæsthesia, with Special Reference to General Practice".

May: Dr. F. Yeates and Dr. C. C. Wark, "Common Eye and E.N.T. Conditions in General Practice".

June: Symposium on public health problems, Dr. D. A. Dowling and Dr. A. Fryberg.

Office Bearers and Councillors.

The following office bearers were appointed by the Council for 1953-1954: Chairman of Council, Dr. H. W. Horn (reelected); Honorary Treasurer, Dr. J. G. Wagner (reelected); Chairman of Subcommittees, Dr. A. D. A. Mayes; Honorary Secretary of Subcommittees, Dr. A. F. McSweeny; Honorary Librarian, Dr. Neville G. Sutton (reelected); Honorary Assistant Librarian, Dr. Konrad Hirschfeld (reelected).

Dr. D. A. Henderson was reelected Honorary Secretary, and in accordance with the by-laws the following were elected members of the Council for a period of two years, 1953-1955: Dr. B. N. Adsett, Dr. G. V. Hickey, senior, Dr. A. F. McSweeny, Dr. A. D. A. Mayes, Dr. Charles Roe, Dr. R. B. Salter, Dr. J. G. Wagner.

[1] On leave four meetings.
[2] On leave three meetings.
[3] Appointed October 10, 1953.
[4] On leave three meetings.

Representation.

The Branch was represented as follows during the year:

Council of the British Medical Association: Dr. Isaac Jones.

British Medical Association, Representative Meeting, Glasgow, Scotland, July, 1954: Delegates, Dr. L. P. Sapsford, Dr. R. J. C. Dark.

Federal Council of the British Medical Association in Australia: Dr. H. W. Horn, Dr. Alan E. Lee.

Australasian Medical Publishing Company, Limited: Dr. Alan E. Lee (director), Dr. T. A. Price, Dr. H. W. Horn (members).

Australian Association for Better Hearing: Dr. C. C. Wark. Dr. J. R. Hutcheon.

Blue Nursing Service: Dr. A. D. A. Mayes.

College of Nursing, Australia (Queensland State Committee): Dr. D. A. Henderson.

Flying Doctor Service of Australia: Dr. Harold Crawford.

Medical Assessment Tribunal: Dr. G. W. Macartney.

Medical Board of Queensland: Dr. R. G. Quinn, Dr. F. W. R. Lukin, Dr. J. G. Wagner.

Medical Officers' Relief Fund (Federal): *Queensland Committee*: Dr. W. H. Steel, Dr. G. W. Macartney, Dr. K. B. Fraser.

National Safety Council of Australia (Queensland Division): Dr. L. A. Little.

Physical Fitness Association of Queensland: Dr. E. S. Meyers, Dr. Harold Crawford.

Physiotherapy Board of Studies: Dr. J. R. S. Lahz.

Post-Graduate Medical Education Committee: Dr. Alan E. Lee, Dr. T. V. Stubbs Brown, Dr. B. N. Adsett.

Queensland Bush Children's Health Scheme: Dr. H. W. Anderson.

Queensland Bush Nursing Association: Dr. L. Bedford Elwell.

Queensland Health Education Council: Dr. W. J. Saxton.

Queensland Institute of Medical Research: Dr. W. H. Steel.

Red Cross Blood Transfusion Service Committee: Dr. K. B. Fraser.

Society of Laboratory Technicians of Australasia (Queensland Branch): Dr. J. V. Duhig, Dr. N. M. Gutteridge.

Medico-Pharmaceutical Liaison Committee: Dr. R. S Bennett, Dr. O. Hirschfeld, Dr. H. W. Horn, Dr. H. R. Love, Dr. A. D. A. Mayes.

National Health Service: Pensioner Medical Service, Committee of Inquiry: Dr. K. B. Fraser, Dr. G. V. Hickey, senior, Dr. H. W. Horn, Dr. H. S. Patterson.

Surf Life Saving Association of Australia (Queensland Branch): Dr. F. W. R. Lukin.

World Medical Association, Representing Federal Council: Dr. H. W. Horn.

Federal Medical War Relief Fund: Local Committee of Management: Dr. J. G. Wagner (Chairman), Dr. F. W. R. Lukin (Honorary Secretary), Dr. J. V. Duhig, Dr. Harold R. Love, Dr. B. L. W. Clarke.

Medical Services Committee of Inquiry, National Health Act: Dr. G. V. Hickey, senior, Dr. B. N. Adsett, Dr. K. B. Fraser, Dr. H. W. Horn, Dr. H. R. Love, Dr. H. S. Patterson.

The Editor of THE MEDICAL JOURNAL OF AUSTRALIA was represented by Dr. Felix Arden.

Ethics Committee.

The following were elected members of the Ethics Committee at the last annual meeting of the Branch: Dr. Val McDowall, Dr. G. W. Macartney, Dr. L. J. J. Nye, Dr. J. J. Power, Dr. R. G. Quinn. Dr. F. W. R. Lukin and Dr. Alex Murphy were elected to take the place of Dr. M. Graham Sutton and Dr. G. W. Macartney, who did not desire reelection.

Library.

Dr. Neville G. Sutton was reelected honorary librarian and Dr. Konrad Hirschfeld was reelected assistant honorary librarian.

From June, 1953, to July, 1954, two hundred and eighty journals and books were borrowed by members and medical and scientific libraries.

It is gratifying to note that the increase in the use of the library facilities is still being maintained.

The Branch receives forty journals *plus The Collected Papers of the Mayo Clinic*, "The Harvey Lectures", "The Medical Annual", "British Surgical Practice", a selection of year books on various subjects, and other medical reports.

The Branch wishes to thank the Editor of THE MEDICAL JOURNAL OF AUSTRALIA for another donation of twenty-four books, on miscellaneous subjects, which now makes a total of one hundred and two received from this source.

Interlibrary exchange exists between the medical and scientific libraries in Queensland and in the southern States, and we are very grateful for their cooperation.

Building Subcommittee.

Personnel: Dr. J. G. Wagner (Chairman), Dr. B. L. W. Clarke, Dr. M. Graham Sutton, Dr. A. D. A. Mayes, Dr. R. G. Quinn.

Finance has been arranged and plans are being prepared for a new building on the old site at 225 Wickham Terrace.

The Brisbane City Council intends to widen Bartley Street by resuming portion of Branch property. This decision made it necessary to alter the architect's plan. A new plan should soon be ready for Council approval and building will be commenced at the earliest possible date.

Organization Subcommittee.

Personnel: Dr. A. D. A. Mayes (Chairman), Dr. A. F. McSweeny (Honorary Secretary), Dr. B. N. Adsett, Dr. B. L. W. Clarke, Dr. D. C. Jackson, Dr. Alan E. Lee, Dr. Charles Roe, Dr. R. B. Salter and ex-officio members of the Council.

Twenty-two meetings were held during the year, at which many matters on a multitude of subjects were dealt with and recommendations made to Council where indicated.

Medical Fees Tribunal.

Personnel: Dr. J. G. Wagner (Chairman), Dr. Alan E. Lee (Honorary Secretary), Dr. T. V. Stubbs Brown, Dr. R. G. Quinn, Dr. Norman Sherwood.

During the year five meetings were held, at which four cases were dealt with, and adjudication on one is still pending.

Bancroft Oration.

The Bancroft Oration for 1953 was delivered by Dr. A. J. Collins, of Sydney, on Friday, August 28, on the subject of "Some Aspects of Modern Drug Therapy", to an audience of 160.

At the conclusion of the Oration the President presented the Joseph Bancroft Medal to Dr. Collins.

Jackson Memorial Lecture.

The twenty-third Jackson Memorial Lecture was delivered by Dr. Glen V. Hickey, senior, on October 2, 1953, his subject being "Hospitals — Retrospect and Prospect".

Memorial Prizes, 1953.

At the annual general meeting of the Branch, to be held on August 21, the following prizes, awarded on the recommendation of the Faculty of Medicine of the University of Queensland for 1953, will be presented by the President.

Memorial Prize of the Queensland Branch of the British Medical Association: Irwin Peter Hansen, M.B., B.S. (University of Queensland).

Harold Plant Memorial Prize: William Sydney Egerton, M.B., B.S. (University of Queensland).

Medical Students' Loan Fund.

The final instalment of a loan granted to a student three years ago, to assist him in completing his medical course, has been received. He is now well established in a medical position and is very grateful for the assistance given to him when he was greatly in need of it.

Amendment of By-laws.

At the general meeting of the Queensland Branch of the British Medical Association held on April 2, 1954, By-law 6 was amended to read as follows:

> No member whose subscription is in arrear after June 1 shall be entitled to vote for the election of officers for the ensuing year, nor shall he be eligible for election as an officer.

"The Medical Journal of Australia."

At the last annual meeting of the Branch we were pleased to have the Editor of the journal, Dr. Mervyn Archdall, present in his official capacity.

Medical Monograph Fund.

A donation of £50 was sent to this fund, which has been established by the Federal Council for the publication of monographs of a high standard on the medical and allied sciences on behalf of authors who are unable to bear the cost of publication.

London House.

Following on a visit from the warden, Brigadier E. C. Pepper, a donation of £150 was sent by Council to the London House Fund of the Federal Council of the British Medical Association in Australia for the purpose of "naming" rooms in London House.

Many Queenslanders have cause to be grateful for the excellent facilities extended to them at London House during their visit overseas for post-graduate study.

Introduction to Private Practice.

At the end of 1953 Council invited resident medical officers who were leaving the public hospitals to discuss various aspects of private practice with senior practitioners. The response was not as good as had been expected, but those who did attend were unanimous in expressing their appreciation of the benefit they derived from the discussion. It has been decided to repeat the invitation at the end of this year.

Company Formation by Medical Practitioners.

A resolution passed by the Federal Council at its meeting held in March last was promulgated to members of the Branch as follows:

> That the Federal Council is of the opinion that the formation of companies by medical practitioners is prejudicial to the doctor-patient relationship and undesirable.

The Pensioner Medical Service.

The Pensioner Medical Service is now generally approved by the profession and there is no doubt that it has met, to a very large extent, the medical needs of pensioners. On humane and medico-political grounds we must agree that the permanence of the service in some form is certain, but members are assured that political moves to abolish or relax the means test will be closely examined. The agreement with the Government under which the present service operates will terminate at the end of 1954, and all British Medical Association Councils in Australia are engaged in debating what safeguards will be required in the new agreement to protect the profession against too great an intrusion by the welfare State into the private practice of medicine.

Your Council reports with regret that a number of members of the Branch were summoned before the Pensioner Medical Services Committee of Inquiry during the year and that disciplinary measures were taken against them by the Minister.

Pharmaceutical Benefits Act.

Pharmaceutical benefits are now supplied under the authority of the new *National Health Service Act*, which has consolidated under a single act the various existing divisions of the service. The transition was effected without warning to the profession, from whom the associated alterations in the list of "free" drugs and the amended regulations drew much destructive comment. Your Council forwarded a strong protest to the Federal Council on the matters objected to and confidently awaits satisfactory action by the Minister. The cost of these benefits is rising rapidly in successive years, and while your Council has no evidence that this is due to lavish prescribing, it must support any effort by the Government which genuinely aims at the prevention of waste.

Workers' Compensation Schedule of Fees.

The schedule of fees for injured workers was subjected to scrutiny by the Council during the year and anomalies were corrected. The readiness of the Commissioner to accede to the proposals made is quoted to indicate the cordial relations between the parties to the agreement. While it is fully recognized that some sections of the profession believe that a wide revision of the schedule is desirable, it must be remembered that the Branch and Federal Council assured the Federal Minister for Health a short time ago that medical fees would remain stable for the present and that this assurance was given Press publicity. Nevertheless, all submissions by members or sections of the Branch have been fully considered, and if any specialist groups have been dissatisfied with the decisions made, the Council firmly assures them that their views will not be forgotten when it is decided to review the scale.

National Health Service: Medical Benefits Fund of Australia Limited, Queensland Division.

The fund has witnessed, during the past twelve months, a period of extraordinary difficulties which it has now happily surmounted.

With the initiation of the Commonwealth scheme of medical benefits in July, 1953, a large influx of new contributors deluged the fund and strained its administration very seriously. After a period of difficulty, which caused considerable delay in the settlement of claims, a delay which was generally accepted by doctors and contributors as inevitable in the circumstances, a much enlarged staff was trained to the required standards of efficiency. This allowed the payment during June, 1954, of 17,245 cheques for a total benefit (Fund and Commonwealth) of £105,000. Such figures demonstrate the preponderant position which the Medical Benefits Fund of Australia occupies in the field of medical and hospital insurance in Queensland.

With reserves approaching £250,000, and its own building in the centre of Brisbane, its future position is assured.

The Council of the Fund is meeting in Brisbane on August 28, when it is hoped a review of the year's operation will allow increased benefits to be offered in all schedules.

The Queensland Executive Committee congratulates its manager, Mr. K. J. Allison, on the progress of the Fund. The present Executive Committee comprises: Dr. Alan E. Lee (Chairman), Dr. J. R. Adam, Dr. R. S. Cohen, Dr. H. W. Horn, Dr. A. D. A. Mayes, Dr. H. S. Patterson, Dr. C. Roe, Dr. N. L. Sherwood, Dr. J. G. Wagner, Mrs. E. L. Byth, Messrs. J. H. Buckle and L. J. McCray.

British Medical Agency of Queensland, Proprietary, Limited.

For perhaps about two months of each year, from December to February, there appear to be sufficient doctors to fill positions offering in the locum, assistantship and partnership field, but outside this period there remains a shortage, and not only in the three avenues mentioned, but also a shortage of men prepared to start practice in the country. This is surprising, as opportunities are many and they cover a considerable variety with, in practically every instance, splendid experience.

Prior to World War II reliance could be placed on there being eight to ten doctors who devoted the major portion of their time to locum duties. Now such practitioners are practically non-existent; thus those members desiring relief for holidays or other purposes are finding it difficult and in many cases impossible to satisfy their requirements.

An average number of practices have changed hands during the year, many vendors meeting buyers by accepting low deposits.

An increasing number of doctors have inspected the large range of instruments and equipment on display and for sale on behalf of deceased and retired doctors, and have benefited substantially in their purchases, particularly in the case of those members setting out in practice and desiring to curtail expenditure to a minimum.

Volume of general business has stepped up considerably over the past two years.

Enquiries relative to assistantships, partnerships and normal medical agency business continue to be received, and this service is appreciated by members.

Another satisfactory year is reported.

Queensland Medical Finance, Proprietary, Limited.

The Company was established primarily to assist young medical practitioners in the purchase of approved practices or partnerships.

Several doctors have received financial assistance during the past twelve months, thus giving them an early and quick start in life. Many others have redeemed their loans, and all have expressed their appreciation of the assistance afforded.

Enquiries should be addressed to the Secretary of the Company at 225 Wickham Terrace, Brisbane.

Queensland Post-Graduate Medical Education Committee.

The Post-Graduate Medical Education Committee meets monthly to arrange medical education in Queensland and overseas for practitioners wishing to further their knowledge and to keep up to date with new developments in the medical field.

Representatives on the Committee are appointed by the Senate of the University of Queensland, the Council of the British Medical Association (Queensland Branch), Part-time Medical Officers' Association Brisbane General Hospital, Mater Misericordiæ Hospital Honorary Staff, Queensland Fellows and Members, The Royal Australasian College of Physicians, Queensland State Council Royal Australasian College of Surgeons, Medical Board of Queensland, Brisbane and South Coast Hospitals Board.

The British Medical Association is represented by Dr. Alan E. Lee, Dr. T. V. Stubbs Brown and Dr. B. N. Adsett.

The following visitors to Australia have lectured in Brisbane: Dr. Ronald MacKeith, pædiatrician, Guy's Hospital, London (invited by the Pædiatric Section, British Medical Association), Dr. Douglas Guthrie, lecturer in history of medicine, University of Edinburgh. Professor Eccles, professor of physiology, and Professor Ennor, professor of biochemistry, both at the Australian National University, Canberra, also lectured in Brisbane.

Brigadier E. C. Pepper, warden of London House, attended a meeting of the Committee whilst in Brisbane.

Arranging tours to country centres is still an important part of post-graduate education, and the following centres have been visited: Bundaberg (4), Dalby (2), Gayndah (2), Gympie/Maryborough (2), Ipswich (7), Nambour (2), Mackay/Rockhampton (4), Townsville/Cairns/Innisfail (2), South Burnett (3), South Coast (4), Toowoomba (5), Warwick (1), Lismore (1). A full programme for the second half of the year is being arranged.

The course in advanced surgery has continued, lectures being given each week, and the attendance has shown that this course is meeting a very great need.

Sponsorship: Increasing numbers of young graduates apply to the Committee for sponsorship to attend courses overseas. Such applications should be made well in advance, as places in courses (especially those in basic sciences) are allotted at least three months before the commencement of the course.

Many applicants are desirous of obtaining an appointment as ship's surgeon and are advised to keep in close touch with the shipping companies, either personally or through their trading banks. Few requests are received by the Australian Post-Graduate Federation in Medicine from the companies, and when such requests are received they are allotted to States in rotation. The Committee is pleased to assist post-graduate students with a letter, to be presented to the shipping companies, stating that the applicant is a bona fide student enrolled for a course of study in England.

Registration in Great Britain: The Medical Board of Queensland has informed the General Medical Council of the hospitals in which, in their opinion, adequate training for registration is received. If the doctor presents a certificate to the Medical Board from the medical superintendent of a hospital on the list of approved hospitals, stating his work was satisfactory and naming the departments in which he worked, the Medical Board will issue a certificate for the General Medical Council stating the doctor has complied with the Regulations for Registration.

The Committee has sponsored nineteen Queensland doctors for enrolment courses in Great Britain.

Affiliated Local Associations.

Annual Conference.

A conference of representatives and members of the Council took place on Wednesday, August 26, 1953, at B.M.A. House, at which eight Local Associations were represented. The following matters were discussed: "Proposed College of General Practitioners", discussion opened by Dr. H. S. Patterson and Dr. B. N. Adsett; "Doctors' Call Service", discussion opened by Dr. A. D. A. Mayes and Dr. D. A. Henderson; "Advertising by Members", discussion opened by Dr. J. G. Wagner; "National Health Plan", discussion opened by Dr. H. W. Horn, Dr. Alan E. Lee and Dr. J. G. Wagner. The visitors were entertained at luncheon at the United Service Club.

Bundaberg Local Association (British Medical Association).

The Bundaberg Local Association has a membership of ten. During the year we farewelled one and welcomed two new members. The President is again Dr. Egmont Schmidt.

Our main function during the year has been monthly clinic evenings, which have been very popular, and some interesting and instructive cases have been presented.

We have had visits from Dr. G. H. Brandis, who gave us two very interesting lectures. We are hoping for a further lecturer to visit us before the end of the year.

ERIC E. SCHMIDT,
Honorary Secretary.

Cairns Local Association (British Medical Association).

Throughout the year a number of post-graduate lectures were held at Cairns and were quite well attended by the doctors of Cairns and the surrounding districts.

In September, 1953, Dr. C. C. Wark and Dr. G. H. Brandis, of Brisbane, gave lectures on "Infections of External and Middle Ear" and "Recent Advances in Surgery", respectively.

Dr. K. J. J. Dorney, of Townsville, gave a lecture on "Resuscitation Methods used in Korea".

For June, 1954, lectures have been arranged for Dr. A. J. Foote, of Brisbane, "Skin Diseases Affecting the Hands", and Dr. C. B. R. Mann, of Brisbane, "Surgical Treatment of Peptic Ulcer" and "Advances in Treatment of Inguinal Hernia".

Much discussion took place throughout the year regarding the reopening of the private wards at the Cairns Base Hospital, which have been closed to the local private practitioners since November, 1953, owing to the shortage of nurses. There has been no improvement in the position lately, and the situation will be reviewed again throughout the year in the hope that these wards will be reopened as soon as possible.

C. C. REID,
Honorary Secretary.

Downs and South-Western Medical Association.

The twenty-seventh annual meeting of this Association was held at the Toowoomba General Hospital on September 25, 1953.

The following office bearers were elected: President, Dr. A. McGregor; President-Elect, Dr. G. V. Hickey, junior; Past-President, Dr. J. W. P. Henderson; Auditor, Secretary-Treasurer, Dr. L. Fenwick; Committee, Dr. J. Woodburn, Dr. J. Beale, Dr. W. Machin, Dr. R. J. H. Spark, Dr. C. Morton.

The annual dinner was held on October 31, 1953, at which the President and President-Elect of the Queensland Branch of the British Medical Association were guests. Other guests included the presidents of the local law and dental associations.

Two executive meetings were held during the year as well as one clinical meeting. Two films have been shown during the year.

To date, three visiting doctors have delivered lectures here. Dr. E. R. W. Thomson lectured on surgery of the biliary tract, Dr. L. T. Jobbins on aural discharge, and Dr. F. G. Christensen lectured on cosmetic surgery in medical and dental practice. Other lecturers will be visiting in the near future. The last lecture was delivered at the combined meeting of the medical and dental associations.

A meeting was held recently to discuss the Pensioner Medical Service and the form in which it should be renewed.

We are extremely grateful to all visiting lecturers, whose talks were all interesting.

L. FENWICK,
Honorary Secretary.

Mackay Local Medical Association.

Activities of the Mackay Local Medical Association have been greatly limited during the year 1953-1954.

Mackay favours limiting the Pensioner Medical Service to its present terms and suggests that new additions should be through a medical benefits fund, the premium to be paid by the pensioner.

Visiting lecturers this year were Dr. A. G. S. Cooper, from the Radium Clinic, and Dr. Otto Hirschfeld and Dr. Evan Thomson, who discussed "Antibiotics".

Local practitioners to read papers were: Dr. S. C. Williams, "The Painful Shoulder"; Dr. K. J. Whitehead, "Advances in the Pathogenesis and Treatment of Shock"; Dr. R. Courtice, "The Conductive Mechanism of the Heart and Cardiac Arrhythmias"; Dr. E. F. Reye, "Low Back Pain".

S. C. WILLIAMS,
Honorary Secretary.

Maryborough Local Medical Association.

The last annual general meeting was held in the lounge of the Maryborough and Wide Bay Club on October 23, 1953.

The following officers were elected for the year: President, Dr. G. C. Corlis; Honorary Secretary, Dr. A. L. Proctor; Hospital Representatives, Dr. E. F. H. Theile and Dr. A. J. Kennedy.

This year we have been very happy to welcome two visits from lecturers of the Post-Graduate Committee.

In November we heard a very interesting and informative address from Dr. Grantley Stable on "Antibiotics in Pædiatrics".

In June Dr. C. A. C. Leggett and Dr. J. J. Fitzwater spoke on "Colon Disorders" and "Hypertension, Modern Trends in Therapy", respectively. Both these meetings were well attended and considered to be of great benefit. The local association is looking forward to more visits from the Post-Graduate Committee's representatives.

Dr. D. A. Dowling and Mr. J. J. Doyle, chief pharmacist of the Department of Health, met the members of the Local Association in April, and many points of the National Health Service were discussed with benefit to members.

Three "picture nights" were held during the year, in which films on loan from Wyeth Incorporated Limited were screened. These films were enjoyed by all members attending.

L. PROCTOR,
Honorary Secretary.

Nambour District Local Medical Association.

This association is completing another profitable year both medically and socially.

Our post-graduate lectures have been well to the fore, thanks to the cooperation of the Post-Graduate Committee; likewise our film evenings. We average a meeting, for some purpose or other, every six to eight weeks. Thus all members are kept fresh in thought and likewise acquainted with official British Medical Association matters of a purely business nature.

We never cease to air our views against the persistent and progressive disease of form-filling and time-wasting in practice nowadays, and are everlastingly seeking means to overcome time lost by such measures. This is the complaint of the year from this local association to our parent bodies. Contra to this, we thank our parent bodies for their help and advice and their wish to keep local branches well informed.

J. E. TROTTER,
Honorary Secretary.

South Coast Local Association.

The local association has had another successful year. The membership numbers eleven, and the interest of members in the activities of the association has been consistent.

Through the ready cooperation of the Post-Graduate Medical Education Committee, lecturers have been made available and four clinical meetings have been held to hear visiting lecturers. These were well attended and proved of great interest to members.

We were very happy to have with us at our last meeting members of the Murwillumbah Local Association.

W. A. MACKEY,
Honorary Secretary.

Lower Burdekin Local Association (Ayr).

Two meetings only have been held at which matters affecting members locally were discussed.

It is hoped that, as time goes by, the association will become more vigorous and that it will be able to furnish a fuller report to indicate that this is so.

Membership at the moment stands at six.

J. H. JOYCE,
Honorary Secretary.

Innisfail Local Medical Association.

Regular meetings were held throughout the year, with Dr. T. J. Cotter as President and Dr. W. N. Markwell as Secretary.

On May 13, 1954, Dr. J. R. Adam discussed with us problems on the health benefit scheme.

On June 24, 1954, Dr. E. H. Derrick lectured on the subject "Northern Fevers".

On August 5, 1954, Dr. D. A. Dowling and Mr. J. J. Doyle discussed the national health scheme.

The association is grateful to the Post-Graduate Committee for sending lecturers to our area. Dr. G. H. Brandis and Dr. C. C. Wark arrive on September 29, 1954.

Our annual dinner was held in April, 1954, after which a meeting took place. Dr. W. N. Markwell was elected president for the ensuing year, and Dr. A. G. Taylor, superintendent of the Innisfail Hospital, was elected secretary.

A. G. TAYLOR,
Honorary Secretary.

Ipswich and West Moreton Medical Association.

The following officers were elected at the annual meeting of the Ipswich and West Moreton Medical Association, which was held on February 25, 1954. President, Dr. K. J. Hill; Honorary Secretary, Dr. J. A. Shera.

The meetings were held as follows: July, 1953, Dr. L. W. Gall, "Role of Fibroid in Pregnancy". August, 1953, Dr. D. A. Henderson, "Hypertension". November, 1953, Dr. W. T. Gibbs, "Overseas Experiences". March, 1954, Professor G. Shedden Adam, "Relative Infertility". April, 1954, Dr. D. A. Dowling and Mr. J. J. Doyle, "Problems Arising out of P.M.S. and P.B.S.". June, 1954, Dr. L. S. Davies, "Plastic Surgery". July, 1954, Dr. L. D. Walters, "Liver Disease".

The meetings were generally well attended and the association is very appreciative of the help given by the Director and members of the Post-Graduate Medical Education Committee and the lecturers, and to the Board and Medical Superintendent and Matron of the Ipswich General Hospital for their courtesy in providing lecture-room facilities and supper at the conclusion of meetings.

J. A. SHERA,
Honorary Secretary.

Rockhampton and District Local Medical Association.

At the annual general meeting Dr. J. B. Gordon was elected President and Dr. J. C. Ross, Vice-President.

Monthly clinical meetings have been held in association with the staff of the Rockhampton General Hospital, and these have been organized by Dr. J. K. Fullagar, the medical superintendent. These have taken the form of a short paper followed by demonstration of clinical cases. The standard has been high, but at times the attendance has been a little disappointing, especially the junior members of the profession.

The annual dinner and Christmas cocktail party were an outstanding social success.

The only ordinary general meeting called during the year was to discuss the Pensioner Medical Service. Perhaps the most significant recommendation coming from this meeting was:

> Any review of the P.M.S. should provide that pensioners contribute something towards each fee, with a view to reducing abuses of the scheme by pensioners and practitioners.

The present membership of this local association is forty-four.

J. F. GILLOGLEY,
Honorary Secretary.

South Burnett Medical Association.

Regular quarterly meetings of the South Burnett Medical Association have been held during the past twelve months, the last being held at Murgon on July 10, 1954. This meeting was addressed by Dr. N. Y. McCallum, who spoke about skin diseases.

During the past year one of the quarterly meetings took the form of a film evening, the films being obtained from the United States Information Service, Sydney.

Recently a report was forwarded concerning the Branch's opinion of the Pensioner Medical Service.

D. B. NIMMO,
Honorary Secretary.

Townsville Local Association (British Medical Association).

The following is a report of the activities of the Townsville Local Association for the year 1953 to 1954.

Our membership is 34. Twenty-one meetings have been held. There have been nine clinical, eight business, two combined business and clinical meetings, nine lectures, two film

evenings, and one special meeting. Attendance at meetings has been good, especially at clinical meetings and lectures.

Clinical Meetings.—These have been of a high standard. Very well prepared, they have covered a wide range of medical and surgical conditions, and our thanks are due to the superintendent and medical staff of the Townsville General Hospital, on whom the bulk of the work has fallen. Lectures on special subjects were given by Dr. A. G. S. Cooper, "Radiotherapy in Various Diseases"; Mr. T. U. Ley, "Differential Diagnosis of a Limp"; Dr. K. J. Dorney, "Shock and Resuscitation"; Dr. R. A. Douglas, "Hypertension".

Visits arranged by the Post-Graduate Medical Education Committee were: September, Dr. C. C. Wark, "Sinusitis and Middle Ear Disease"; Dr. G. H. Brandis, "Recent Advances in Surgery". June, Dr. A. J. Foote gave an address on "Dermatitis of the Hands", and Dr. C. B. R. Mann lectured on "Inguinal Hernia" and "Surgical Treatment of the Peptic Ulcer".

The Library Subcommittee have organized a large selection of journals, which are housed in the Tropical Institute.

Business Meetings.—The shortage of private patients' accommodation in the Townsville Hospital, the National Health Service, and the Medical Insurance Schemes formed the subjects for spirited discussions at these meetings. A draft constitution for Townsville Local Association was formally adopted at the annual general meeting in June, 1954.

We have also taken a keen interest in the proposed new British Medical Association House to be built in Brisbane, and the State Council is aware of our views on the matter.

A special meeting was held in January, 1954, to deal with the suggestion to hold a medical conference in Townsville. After much discussion it was decided to hold a conference in September, 1954, and at this date the preparations are at an advanced stage under the chairmanship of Mr. T. U. Ley.

Social activities have taken the form of supper parties following post-graduate lectures.

In August, 1953, a delegate attended the Conference of Local Associations in Brisbane.

The year's activities demonstrate the enthusiasm of the members in medical and medico-political affairs.

Mr. T. U. Ley was elected President for 1954-1955 at the annual general meeting.

K. L. KING,
Honorary Secretary.

General Practitioner Group (British Medical Association).

The main work of the General Practitioner Group (British Medical Association) for the past year has been to do with the formation of a Regional Faculty of the College of General Practitioners. This has now been accomplished and the inaugural meeting of the Faculty is to be held on Friday, August 27, 1954, at 8 p.m., at British Medical Association House.

The function of this College will be: (*a*) to provide leadership and guidance in general practice, (*b*) to provide teaching of methods in general practice, (*c*) to record and preserve the art of family practice.

It is hoped that the College, in carrying out these functions, will (*a*) raise the standard of general practice, (*b*) raise the status of the general practitioner.

It has been decided, at a special general meeting, that although the College of General Practitioners has now been formed, the General Practitioner Group (British Medical Association) is to continue in its present form. One of the main problems under discussion by the Group at present is the future of the Pensioner Medical Service. The present attitude of members is that while the present Pensioner Medical Service is working satisfactorily, the General Practitioner Group is resolutely opposed to any widening of the scope of the service, either by liberalization or abolition of the means test or by any other method. This opinion was the subject of a report to the Council of the Queensland Branch of the British Medical Association for its guidance in the matter.

Amongst other matters dealt with by the General Practitioner Group during the past year are the following: (*a*) the training of medical students in general practice, (*b*) the medical call service and a possible roster system, (*c*) the examination of seamen by local medical officers, (*d*) the transport of accident cases by the Queensland Ambulance Transport Brigade to surgeries of general practitioners.

The present membership of the General Practitioner Group Committee is as follows: Dr. H. S. Patterson (Chairman), Dr. Charles Roe (Honorary Secretary), Dr. B. N. Adsett, Dr. Malcolm Carseldine, Dr. J. F. Howes, Dr. D'Arcy Kelly, Dr. T. R. Neville, Dr. R. J. H. Spark and Dr. H. J. Winterbotham.

CHARLES ROE,
Honorary Secretary.

Sections for Study of Special Branches of Medical Knowledge.

History of Medicine Section.

Since our last report we have lost Dr. A. H. Marks, who was one of our most enthusiastic colleagues interested in medical history. During his life Dr. Marks took every opportunity of securing and preserving interesting historical specimens, and in 1952 kindly lent his collection for the display we arranged for the Medical Congress (Section of Medical Literature and History).

Later, Dr. Marks presented his collection to the University of Queensland, and this forms the largest part of the Museum of the History of Medicine which we are attempting to build up at the Medical School.

We are very anxious to receive donations of interesting specimens, books, manuscripts *et cetera* which are of general medical historical interest, but we would be pleased to receive from some of the older members of the Branch accounts or reminiscences concerning the early history of the profession in Queensland or of early medical men, their work, influence and general character.

The course in the history of medicine to Medicine V at the medical school is now given annually instead of to senior students every two years as previously.

G. B. MURPHY,
Honorary Secretary.

Ophthalmological Section.

Four regular meetings were held during the year, the average attendance being twelve. There are twenty-seven members.

The following office bearers and representatives were elected at a meeting held on July 9, 1953: Dr. C. R. Morton, President; Dr. J. B. G. Gibson, Secretary; Dr. B. G. Wilson, Treasurer; Dr. C. R. Morton, Federal Council Representative; Dr. A. V. Henry, Dr. J. L. Hart, Dr. P. B. English, Prevention of Blindness Committee; Dr. C. R. Morton, Federal Visual Hygiene Committee Representative; Dr. F. G. Scoles, with Dr. C. R. Morton to act as proxy, Federal Orthoptic Board Representative; Dr. E. O. Marks, Dr. F. Yeates, Dr. J. L. Hart, State Visual Hygiene Committee.

Throughout the year the following meetings were held: November 16, 1953, general business; November 23, 1953, screening of film showing Filatov's work re corneal graft; March 24, 1954, general business.

Orthopædic Section.

I wish to advise that we have had two meetings, the first at the Brisbane General Hospital, which was clinical in nature, and at this meeting a number of interesting cases were shown by members. A useful discussion followed. The second meeting, which was held at the British Medical Association House, was of a business nature.

Oto-Rhino-Laryngology Section.

The following meetings have been held by the Ear, Nose and Throat Section during the past financial year: (*a*) business meeting, October 7, 1953; (*b*) business and annual meeting, December 9, 1953; (*c*) clinical meeting at Brisbane General Hospital, May 26, 1954.

At the meeting on December 9, 1953, election of officers resulted as follows: Dr. A. K. Green, Chairman; Dr. W. H. B. Crosse, Honorary Secretary-Treasurer; Dr. J. R. Hutcheon, Honorary Auditor.

W. H. B. CROSSE,
Honorary Secretary.

Pædiatric Section.

There are now sixteen members of this section, the Chairman being Dr. P. A. Earnshaw, and the Honorary Secretary, Dr. N. G. Anderson.

Business meetings were held in October, 1953, and March, 1954, to discuss various problems pertaining to child health. Clinical meetings, which took the form of presentation of cases, were held alternately at the Hospital for Sick Children, Herston, and the Mater Misericordiæ Children's Hospital.

N. G. ANDERSON,
Honorary Secretary.

QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

(INCORPORATED.)

Balance Sheet as at June 30, 1954.

	£ s. d.	£ s. d.
FIXED LIABILITIES:		
Loan from Queensland Medical Land Investment Co. Limited ..		4,650 0 0
CURRENT LIABILITIES:		
Provision for Long Service Leave	200 0 0	
Subscriptions for Remittance to—		
British Medical Association, London	36 7 2	
Australasian Medical Publishing Company Limited, Sydney ..	28 2 6	
Medical Students Loan Fund	7 14 0	
Sinking Fund	1 1 0	
	73 4 8	273 4 8
ASSOCIATION FUNDS:		
Accumulation Fund	15,444 9 2	
Sinking Fund	3,194 11 1	
Superannuation Fund	1,030 13 2	
		19,669 13 5
		£24,592 18 1

	£ s. d.	£ s. d.
FIXED ASSETS:		
At cost, less depreciation.		
Land and Buildings—		
B.M.A. House .. 2,165 5 6		
Bartley Street Property 1,359 12 5		
	3,524 17 11	
Typewriters, Bookcases, Balopticon and Furniture	326 6 3	
Architects' Fees—preparing plans for prospective new building—at cost	300 0 0	
Library—at valuation	150 0 0	
Refrigerator Installation	65 10 3	
Fire Alarm System	33 0 8	
Wire Recorder	30 17 4	
Bancroft Medals and Collar	5 17 0	
		4,436 9 5
Investments—		
Queensland Medical Land Investment Co. Ltd.—5,950 shares of £1 each paid to 10/- each at cost	2,975 0 0	
Southern Electric Authority of Queensland — £2,000 — 4¼% — Inscribed Stock at cost ..	2,000 0 0	
British Medical Agency of Queensland Pty. Ltd.—1,000 shares of £1 each, fully paid—at cost	1,000 0 0	
	£5,975 0 0	
Australasian Medical Publishing Company Limited, Sydney—		
5% Series "C" Debentures—at cost	50 0 0	
5% Series "D" Debentures—at cost	5 0 0	
3¾% Series "E" Debentures—at cost	2,700 0 0	
Advance not yet converted to Series "E" Debentures ..	6 7 0	
	£2,761 7 0	
		8,736 7 0
CURRENT ASSETS:		
Australian Consolidated Inscribed Stock—at cost—		
English, Scottish and Australian Bank Ltd.	5,079 7 5	
3¼% maturing September 15, 1959 1,500 0 0		
3¼% maturing October 15, 1960 .. .. .. 300 0 0		
	1,800 0 0	
Sundry Debtors	273 0 0	
Cash	20 0 0	
Electric Light Deposit	12 0 0	
Prepayments	10 10 0	
		7,194 17 5
FUND INVESTMENTS:		
Sinking Fund—		
Australian Consolidated Inscribed Stock—		
£280 3¾% maturing December 15, 1965, at cost	280 0 0	
£90 3¼% maturing October 15, 1960, at cost	90 0 0	
£2,000 3¼% maturing August 15, 1964, at cost	2,000 0 0	
Commonwealth Savings Bank, Brisbane	824 11 1	
	3,194 11 1	
Superannuation Fund—		
Commonwealth Savings Bank, Brisbane	1,030 13 2	
		4,225 4 3
		£24,592 18 1

Auditors' Report.

We have compared the above Balance Sheet with the books, accounts and vouchers of the Queensland Branch of the British Medical Association (Incorporated), and have obtained all the information and explanations we have required.

In our opinion, the Balance Sheet is properly drawn up to exhibit a true and correct view of the state of the Association's affairs as at June 30, 1954, according to the best of our information and the explanations given to us, and as shown by the books of the Association.

The Register of Members and other records which the Company is required to keep by the Companies Acts of 1931-1953, or by its Articles, have, in our opinion, been properly kept.

R. G. GROOM & Co.,
Chartered Accountants (Aust.),
Auditors.

J. G. WAGNER,
Honorary Treasurer.

Brisbane,
July 23, 1954.

QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

(Incorporated.)

Revenue Account for Twelve Months ended June 30, 1954.

Expenditure.	£ s. d.	£ s. d.	Income.	£ s. d.	£ s. d.
1954—June 30.			1954—June 30.		
To Branch Expenses	3,113 9 9		By Branch and Organization Fund—Subscriptions		5,385 7 10
„ Library Expenditure	425 7 5		„ Portion of Journal Subscriptions—To be invested in Australasian Medical Publishing Company Limited, Sydney, Series "E" Debentures		547 5 0
„ Depreciation of Equipment	22 18 7				5,932 12 10
		3,561 15 9	„ B.M.A. House and Bartley Street Property—Rents	566 15 4	
„ Donations		201 0 0	*Less*—Depreciation 90 6 9; Other Expenses 724 13 4	815 0 1	
„ Provision for Staff Superannuation		120 0 0			248 4 9
„ Federal Council—Capitation Fees		1,087 16 0	„ Interest—Southern Electric Authority of Queensland Inscribed Stock	84 19 8	
„ Balance—carried down		1,197 9 6	Australasian Medical Publishing Company Limited Debentures and Funds Held	69 9 3	
			Commonwealth Government Inscribed Stock	58 10 0	
					212 18 11
			„ General—Proceeds Clerical Assistance and Sundries	208 0 0	
			Directors' Fees — Yorkshire Insurance Company Limited	50 0 0	
			Sale of Diet Sheets and Lists of Members	12 14 3	
					270 14 3
	£6,168 1 3				£6,168 1 3
June 30.					
To Provision for Long Service Leave		34 1 0			
„ Net Surplus for Year—Transferred to Accumulation Account		1,163 8 6	June 30. By Balance—brought down		1,197 9 6
	£1,197 9 6				£1,197 9 6

Federal Council of the British Medical Association in Australia.

Two meetings of the Federal Council were held during the year—one in Adelaide in October, 1953, and the other in Melbourne in March, 1954.

Dr. H. W. Horn and Dr. Alan E. Lee represented the Branch at both meetings.

Reports of the proceedings of these meetings were published in The Medical Journal of Australia.

The next meeting of the Federal Council will be held in Brisbane on August 30, 1954.

Australasian Medical Congress (British Medical Association).

Ninth Session, Sydney, 1955.

The Ninth Session of Congress will be held in Sydney from August 20 to 27, 1955.

Dr. A. J. Collins has been appointed President. Dr. David Henderson is the Honorary Local Secretary for Queensland.

Congratulations.

The Council extended congratulations to Sir Alexander Murphy on behalf of the members of the Branch on the honour of Knight Bachelor conferred upon him by Her Majesty the Queen in the Birthday Honours. Previously Sir Alexander had been congratulated by the Council on his election to a Fellowship of the Royal College of Physicians.

Congratulations were also conveyed to Colonel Charles Marks on his appointment as Deputy Director Medical Services, Northern Command.

Social.

A most enjoyable fork dinner at 29 Murray Street was held in August last. We were very pleased to have the President of the Federal Council of the British Medical Association in Australia, Dr. A. J. Collins, and Mrs. Collins as guests. The conveners, who were responsible for the success of the evening, were Dr. B. N. Adsett and Dr. J. R. Adam.

A golf match, Doctors *versus* Dentists, took place on the course of the Royal Queensland Golf Club on November 15, 1954, at which the dentists won the golf match and the Phillips Cup. Dr. B. N. Adsett acted as convener for the medical members.

Conclusion.

The last few years were turbulent and full of care. Every step of the negotiations in regard to the Pensioner Medical Service, the Pharmaceutical, Medical and Hospital Benefits had to be closely watched, for many of them embodied principles which would profoundly affect medical practice in the future. This year, in contrast, has been calm, with no disputes with the Government on fundamental principles. There are, however, clauses in various sections of the *National Health Act* 1953, or interpretations of them, which do not meet with our approval. Regulations will be issued from time to time which will occasion dispute. All this is inevitable and demands constant vigilance on the part of your Council. Experience is needed as well as vigilance, and for this reason we are fortunate in our relatively new system of election, whereby only seven councillors are elected each year.

It is not possible in an annual report to give more than a broad outline of the year's work, but no one with any realistic imagination can read this report without realizing that the work of your Branch Council is onerous and of growing importance. Those who take no interest in the election of their Council do not deserve the work that is done on their behalf. The newer members of the Council have shown a keenness and an appreciation of the problems which arise that should give a feeling of security to those of us who must depend on their judgement and guidance in the coming years. Perhaps the greatest burden of the Council work falls on the Honorary Secretary. Dr. D. A. Henderson is relinquishing this post with my sincere appreciation of the work he has done and the help he has given

QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

(INCORPORATED.)

GENERAL FUND.

Statement of Receipts and Payments for Twelve Months ended June 30, 1954.

RECEIPTS.	£ s. d.	£ s. d.
1953—July 1.		
To Funds at July 1, 1953—		
E. S. & A. Bank Limited—Current Account	4,336 12 3	
Cash	20 0 0	
		4,356 12 3
1954—June 30.		
To Subscriptions—		
Queensland Branch Subscriptions	3,555 2 10	
Organization Fund, Queensland Branch	1,830 5 0	
For remittance to British Medical Association, London	1,825 4 4	
For remittance re Medical Journals	1,150 6 3	
Medical Students' Loan Fund	67 0 6	
Sinking Fund	39 18 0	
		8,467 16 11
„ General—		
Rents—		
B.M.A. House .. 383 14 0		
Bartley Street Property .. 215 1 4		
	598 15 4	
Clerical Assistance and Hire of Office Equipment	208 0 0	
Interest on Southern Electric Authority of Queensland Inscribed Stock	84 19 8	
Australasian Medical Publishing Company Limited—		
Interest on Funds Held 4 16 9		
Interest on Debentures .. 64 12 6		
	69 9 3	
Interest on Commonwealth Inscribed Stock	58 10 0	
Directors' Fees — Yorkshire Insurance Company Limited	50 0 0	
Proceeds Sale Diet Sheets and Lists of Members	12 14 3	
		1,082 8 6
		£13,906 17 8

PAYMENTS.	£ s. d.	£ s. d.
1954—June 30.		
By Amounts remitted on account of Subscriptions collected to—		
British Medical Association, London	1,829 17 1	
Australasian Medical Publishing Company Limited, Sydney—for publication of Journals	605 3 9	
Applied to Series "E" 3½% Debentures	547 5 0	
Medical Students' Loan Fund	59 6 6	
Sinking Fund	38 17 0	
		3,080 9 4
„ Federal Council—Capitation Fee (1954)		1,087 16 0
„ Branch Expenses—		
Salaries, Audit and Honoraria	2,125 4 1	
Printing, Stationery, Postages and Telephone	500 4 0	
Bank Charges, Lighting and Sundries	486 19 2	
		3,112 7 3
„ B.M.A. House Expenses—		
Rates to June 30, 1954	344 11 8	
State Land Tax, Insurance and Maintenance	304 19 8	
	649 11 4	
„ Bartley Street Property—		
Rates to June 30, 1954	53 11 4	
State Land Tax, Insurance and Sundries	21 10 8	
	£75 2 0	
		724 13 4
„ General—		
Library Expenditure	425 7 5	
Donations	201 0 0	
Transfer to Superannuation Fund	120 0 0	
Fire Alarm System	34 3 5	
Purchase—Equipment	10 19 0	
Deposits — Power and Gas Meters	6 0 0	
Bancroft Medals	4 14 6	
		802 4 4
„ Funds at June 30, 1954—		
E.S. & A. Bank Ltd., Brisbane	5,079 7 5	
Cash	20 0 0	
		5,099 7 5
		£13,906 17 8

me. I wish his successor, Dr. D. R. L. Hart, a happy term of office. A president can be greatly helped by the advice of his immediate predecessor. In this I have been very fortunate in following Dr. T. V. Stubbs Brown, who has earned my thanks many times for the support he gave me. The Chairman of the Council, Dr. H. W. Horn, and indeed all the members of the Executive have shown themselves happy to help me on all occasions, and I take this opportunity to express my appreciation.

The increasing membership and activities of the Branch mean more work for the Secretary, Mrs. Spooner, and her staff. Not only have they done this extra work efficiently, but they have shown an interest in the affairs of our Branch which has been of inestimable help. On behalf of the Council and all members I extend to Mrs. Spooner and her staff our appreciation and gratitude.

Dr. H. Stuart Patterson follows me as President. I wish him every success. I hope he can look back at the end of his year with as much pleasure as I do now. It has been, I think for all the Council, a happy year. And a memorable year because of the visit of Her Majesty, our Queen and Patron. God save the Queen.

W. J. SAXTON,
President.

BALANCE SHEET AND FINANCIAL STATEMENT.

The balance sheet and financial statement for the year ended June 30, 1954, copies of which had been circulated to members of the Branch, were adopted on the motion of Dr. J. G. Wagner, seconded by Dr. D. A. Henderson. The financial statements are published herewith.

On the motion of Dr. T. V. Stubbs Brown, seconded by Dr. A. E. Lee, it was resolved that it be a recommendation to the incoming Council that the library facilities of the Branch be reviewed.

OFFICE BEARERS.

The President announced the election of office bearers and councillors for the ensuing year as follows:

President: Dr. H. Stuart Patterson.

President-Elect: Dr. Alan E. Lee.

Past President: Dr. W. J. Saxton.

Honorary Secretary: Dr. D. R. L. Hart.

Councillors: Elected in 1954—Dr. T. V. Stubbs Brown, Dr. B. L. W. Clarke, Dr. H. W. Horn, Dr. D. C. Jackson, Dr. Harold R. Love, Dr. W. H. Steel. *Elected in 1953 for two years—Dr. B. N. Adsett, Dr. G. V. Hickey,* senior, Dr. A. D. A. Mayes, Dr. Charles Roe, Dr. R. B. Salter, Dr. J. G. Wagner.

ETHICS COMMITTEE.

The following were reelected members of the Ethics Committee subject to consent: Dr. Val McDowall, Dr. L. J. J. Nye, Dr. J. J. Power, Dr. R. G. Quinn, Dr. Norman Sherwood, *Dr. F. W. R. Lukin, Sir Alexander Murphy.*

ELECTION OF AUDITORS.

Messrs. R. G. Groom and Company, Chartered Accountants (Aust.), were reelected auditors on the motion of Dr. Charles

Roe, seconded by Dr. D. A. Henderson, at a remuneration to be arranged with Council.

VOTES OF THANKS.

A vote of thanks to the Chairman of Council, Dr. H. W. Horn, was moved by Dr. H. S. Patterson and carried by acclamation. Dr. Horn suitably responded.

On the motion of Dr. D. C. Jackson, a vote of thanks was moved to the retiring Honorary Secretary, Dr. D. A. Henderson, which was carried by acclamation.

The retiring President, Dr. W. J. Saxton, moved a vote of thanks to Dr. T. Russell Neville, who did not stand for reelection as a member of Council, and to Mrs. Spooner and the office staff.

ADJOURNMENT OF MEETING.

The meeting was then adjourned and resumed at 8.30 p.m. in the Main Hall, University of Queensland, St. Lucia, in the presence of His Excellency the Governor, Sir John Lavarack, and Lady Lavarack. The President, Dr. W. J. Saxton, was in the chair.

MEMORIAL ROLL.

The President read the memorial roll of members of the Branch, all present standing.

INDUCTION OF NEW PRESIDENT.

The retiring President introduced the incoming President, Dr. H. Stuart Patterson, and installed him in the presidential chair.

PRESIDENT'S ADDRESS.

The incoming President, Dr. H. Stuart Patterson, delivered his president's address (see page 573).

PRESENTATION OF PRIZES.

The following prizes awarded to medical graduates for 1953 were presented by the President:

Memorial Prize of the Queensland Branch of the British Medical Association: Irwin Peter Hansen, M.B., B.S.

Harold Plant Memorial Prize: William Sydney Egerton, M.B., B.S.

BANCROFT ORATION.

The Bancroft Oration for 1954 was delivered by Sir Alexander Murphy, the title being "He that Increaseth Knowledge Increaseth Sorrow". At the conclusion of the oration the Joseph Bancroft Memorial Medal was presented to Sir Alexander Murphy by the President.

University Intelligence.

THE UNIVERSITY OF SYDNEY.

Conferring of Honorary Degree on Sir James Learmonth.

AT a special meeting of the Senate of the University of Sydney held in the Great Hall of the University on Thursday, September 23, 1954, the Chancellor, Sir Charles Bickerton Blackburn, conferred on Sir James Rögnvald Learmonth, K.C.V.O., C.B.E., the honorary degree of doctor of science. The presentation to the Chancellor of the distinguished recipient of the degree was made by the Deputy Chancellor, Dr. C. G. McDonald.

Dr. McDonald spoke as follows:

Mr. Chancellor: When the surgeons of Australia and New Zealand decided in 1928 to institute a college on the pattern of the Royal College of Surgeons of England, it was not by chance that they selected as the legend under their coat of arms the felicitous words: *Fax mentis incendium gloriæ* (The torch of the mind is the kindler of glory). For it is not by mere skill of hand or the evolution of techniques that important advances in surgery come, but by the mental fires of thought and invention.

James Rögnvald Learmonth began his medical course at the University of Glasgow in 1912. When the tocsin sounded in 1914 he joined the King's Own Scottish Borderers, serving first in France and next with a gas unit in Scotland. After four years of war service he returned to Glasgow whence he graduated with honours in 1921. There followed a decade of post-graduate study and experience, during which he travelled twice to America, first on a Rockefeller fellowship and later as a member of the neurosurgical unit of the Mayo Clinic. His surgical duties at Rochester were punctuated by work in fundamental neurological research. It was the high order of this investigation which marked him out for the Regius professorship of surgery at Aberdeen, to which he was appointed in 1932. Seven years later he was translated to Edinburgh as professor of surgery, and when in 1947 the Regius professorship of clinical surgery fell vacant at the same university, he was asked to accept this chair as well. To be appointed to a double chair in a university of such antiquity and fame was a tribute to his quality and rising power.

On the outbreak of the last war the Medical Research Council of Great Britain put him in charge of a centre stationed on the outskirts of Edinburgh where injuries to blood vessels and peripheral nerves were studied and treated. The scientific value of this work sealed a reputation which was already international.

Since then honours have fallen thick upon him. The Colleges of Surgeons of England, America and Australasia have conferred honorary fellowships upon him, and universities in his own country and on the continent of Europe have inscribed his name on their rolls. He is a Fellow of the Royal Society of Edinburgh and the recipient of the coveted Lister medal of the Royal College of Surgeons of England. Perhaps the greatest distinction of all is his membership of the Medical Research Council of Great Britain on which he is sitting for a second term. Formerly surgeon to King George VI, he is now surgeon to the Queen in Scotland. He was decorated with the order of Commander of the British Empire for his war services in 1945 and created a Knight Commander of the Royal Victorian Order by King George VI in 1949. He has now come to Australia and New Zealand as Sims Commonwealth Travelling Professor.

In the recital of a *curriculum vitæ* there is the danger that the man may be hidden by his achievement. This University honours a famous surgeon not so much for his professional success or the renown which attaches to his name or indeed the contributions which he has made to scientific knowledge—not so much for these as for those intellectual and moral qualities which make him an exemplar of great university men. The flame of his mind has burned, not for his own glory, but for the health and happiness of mankind.

Mr. Chancellor, I present Sir James Rögnvald Learmonth, Knight Commander of the Royal Victorian Order, for admission to the degree of Doctor of Science *honoris causa*.

Sir James Learmonth thanked the University in the following terms:

Mr. Chancellor: To be the recipient of an honour from a great university is always an emotional experience, and the ordinary Scottish expression of gratitude—"Thank you!"—would obviously be monstrously inadequate on an occasion such as this.

I am profoundly grateful for the rare honour which you have conferred upon me and through me upon British surgery, and in particular upon the surgical school of the University of Edinburgh.

It has always seemed to me that this impeccable ceremonial of the University should be matched by an equally impeccable response. I believe that to be possible only if the response be ritual, and I crave your leave, Mr. Chancellor, to use the words spoken on a similar occasion by Lord Rosebery, one of the greatest orators of the twentieth century: "And if I might address your venerable university, which has conferred so gracious and so undeserved an honour upon me, I would say, in the words with which the psalmist hailed the sacred city: 'They shall prosper that love Thee, that love Thee aright, that love Thee not merely as an end, but also as a means, as the blessed link with splendid traditions and with noble men, as the faithful guide and the unfailing friend'."

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Annual Subscription Course.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that the following programme has been arranged for Professor R. McWhirter, F.R.C.S., F.F.R., Professor of Medical Radiology, University of Edinburgh, and Director of Radiotherapy Department, Royal Infirmary, Edinburgh:

Canberra.

Thursday, October 7, at 8 p.m., in the Lecture Hall, Australian Institute of Anatomy: "Importance of Early Diagnosis and Treatment of Cancer."

Sydney.

Wednesday, October 13, at 8.15 p.m., in the Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital: "Treatment of Brain Tumours."

Monday, October 18, at 8.15 p.m., in the Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital: "Treatment of Carcinoma of the Larynx and Pharynx" (in conjunction with the Oto-Rhino-Laryngological Society of New South Wales).

Tuesday, October 19, at 5 p.m., in the Maitland Lecture Theatre, Sydney Hospital: Clinico-pathological conference.

Wednesday, October 20, at 8.15 p.m., in the Stawell Hall, 145 Macquarie Street: "Treatment of Breast Cancer" (in conjunction with the State Committee of the Royal Australasian College of Surgeons and the College of Radiologists of Australasia).

Friday, October 22, at 1.15 p.m., in the Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital: Seminar, "Carcinoma of the Thyroid".

Monday, October 25, at 8.15 p.m., in the Stawell Hall, 145 Macquarie Street: "The Place of Radiotherapy in Neoplasms of the Urinary Tract" (in conjunction with the Urological Society of Australasia).

Wednesday, October 27, at 8.15 p.m., in the Stawell Hall, 145 Macquarie Street: "Importance of Early Diagnosis and Treatment of Cancer."

Friday, October 29, at 8.15 p.m., in the Stawell Hall, 145 Macquarie Street: "Dysfibroplasia of Bone" (in conjunction with the College of Radiologists of Australasia).

Newcastle.

Saturday, October 23, at 4 p.m., in the New Lecture Hall, The Royal Newcastle Hospital: "Early Diagnosis and Treatment of Carcinoma of the Breast."

Sunday, October 24, at 2 p.m., in the New Lecture Hall, The Royal Newcastle Hospital: "Importance of Early Diagnosis and Treatment of Cancer."

Fees.

The annual subscription course covers attendance at lectures by overseas visiting lecturers and other specially arranged activities. The annual fee is £2 2s. from July 1. The fee for resident medical officers is £1 1s. Further inquiries may be made on application to the Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney.

Week-End Course in Cancer at Newcastle: Corrigendum.

The Post-Graduate Committee in Medicine in the University of Sydney wishes to announce that attendance at the week-end course in cancer at Newcastle on October 23 and 24, 1954, will be free of charge. This course is being held under a grant from the New South Wales Cancer Council.

Research.

MEDICAL RESEARCH FELLOWSHIPS IN THE UNIVERSITY OF SYDNEY.

APPLICATIONS are invited for the following medical research fellowships in the University of Sydney for the year 1955. Fellowships are renewable for a second and, in certain circumstances, a third year:

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED SEPTEMBER 18, 1954.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	8(5)	3(3)	6(3)	..	2(2)	..	..	..	19
Amœbiasis	..	..	1	..	..	..	..	..	1
Ancylostomiasis	141	..	3	1(1)	..	..	1	..	146
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	1	..	1(1)	..	..	..	..	..	2
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	1(1)	2(1)	..	..	1	..	..	..	4
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	1(1)	11(9)	5(5)	..	..	..	..	..	17
Diphtheria	3(2)	2(1)	2(2)	..	2(1)	..	..	..	9
Dysentery (Bacillary)	..	..	3(3)	..	..	..	..	..	3
Encephalitis	..	1(1)	..	..	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	43(25)	21(19)	..	..	1(1)	..	..	..	65
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	1	..	1
Leptospirosis	..	..	..	..	..	..	..	..	..
Malaria	..	1(1)	5(5)	..	..	..	..	..	6
Meningococcal Infection	10(8)	2(1)	2	..	..	..	..	..	14
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	1	7(5)	1	3(2)	3(2)	..	..	..	15
Puerperal Fever	..	..	..	..	..	..	..	..	..
Rubella	..	9(6)	..	..	5(5)	..	..	..	14
Salmonella Infection	..	..	..	..	3(3)	..	..	..	3
Scarlet Fever	9(8)	19(15)	11(6)	6(5)	3(2)	2	..	..	50
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	6	..	..	..	6
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	50(36)	29(12)	8(1)	3(2)	9(8)	3	3	..	105
Typhoid Fever	1(1)	1(1)	..	..	..	..	..	..	2
Typhus (Flea-, Mite- and Tick-borne)	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

The Reginald Maney Lake and Amy Laura Bonamy Scholarship for pathological research work. Its value is £1052 *per annum*. It will fall due on January 1, 1955.

The Liston Wilson Fellowship for research in spastic paralysis or some allied subject. Its value is £1052 *per annum*. It will fall due early in 1955.

The Sister Sanders Scholarship for part-time research work in the prevention of disease in children. Its value is to be determined. It will fall due on January 1, 1955.

The Drug Houses of Australia Research Fellowship for experimental pharmacology. Its value is £1300 *per annum*. It will fall due on January 1, 1955.

Applications for fellowships for 1955 should be made to the Registrar, the University of Sydney, and will close on November 30, 1954. The fellowships for 1955 will be awarded in December, 1954. Application forms may be obtained from the Registrar's office. Regulations in regard to these research fellowships may be seen in the 1954 Calendar of the University of Sydney on pages 471-473.

Australian Medical Board Proceedings.

QUEENSLAND.

THE following have been registered, pursuant to the provisions of *The Medical Acts*, 1939-1948, as duly qualified medical practitioners: Rennick, Gordon John, M.B., B.S., 1952 (Univ. Melbourne); Anderson, Douglas Joseph, M.B., B.S., 1930 (Univ. Sydney), M.R.C.P. (London), 1936, F.R.A.C.P., 1938, M.D., 1940 (Univ. Sydney); Wajeman, Maurice, M.B., B.S., 1954 (Univ. Sydney); Ferguson, Edward Stephen Perry, M.B., B.S., 1950 (Univ. Sydney), F.R.C.S. (England), 1953.

The following additional qualifications have been registered: Grant, Peter John Falconar, F.R.C.S. (Edinburgh), 1954; Friend, William Douglas, F.R.C.S. (England), 1952; Murphy, Oswald Ellis Joseph, F.R.A.C.P., 1938, F.R.C.P. (London), 1954; Spencer, Terence Edward Thornton, D.T.M. and H., 1953 (Univ. Sydney); Windsor, John Clement, F.R.A.C.S., 1954.

Notice.

THE AUSTRALASIAN ASSOCIATION OF PSYCHIATRISTS.

THE Australasian Association of Psychiatrists will hold their federal meeting in Melbourne from October 11 to 14, 1954, inclusive. All members of the British Medical Association are cordially invited to attend the scientific sessions of the meeting. The honorary secretary of the Association is Dr. Ian Martin, Cato Wing, Epworth Hospital, Erin Street, Richmond, Victoria.

Deaths.

THE following deaths have been announced:

STEWART.—Charles Edward Stewart, on September 16, 1954, at Cohuna, Victoria.

STEPHENS.—Henry Zouch Stephens, on September 20, 1954, at Sydney.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Wallace, Gilbert Hugh Murray, M.B., B.S., 1952 (Univ. Sydney), St. George Hospital, Kogarah, New South Wales.

Medical Appointments.

Dr. C. G. Roberts has been appointed to the Department of Public Health, New South Wales.

Dr. J. E. Meredith has been appointed government medical officer at Thursday Island, Queensland.

Dr. R. Hunter has been appointed honorary clinical assistant to the Surgical Section of the Royal Adelaide Hospital.

Dr. Pauline Margaret Daniels has been appointed senior registrar in anæsthesia at the Royal Adelaide Hospital.

Dr. H. N. Robson has been appointed a medical referee for the purposes of the *Workmen's Compensation Act*, 1932-1953, South Australia.

Dr. D. G. Maitland has been appointed Honorary Director of Radiology at the Mater Misericordiæ Hospital, North Sydney.

Diary for the Month.

OCT. 12.—New South Wales Branch, B.M.A.: Organization and Science Committee.
OCT. 12.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
OCT. 18.—Victorian Branch, B.M.A.: Finance Subcommittee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Tasmania: Part-time specialist appointments for the north-west coast of Tasmania.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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